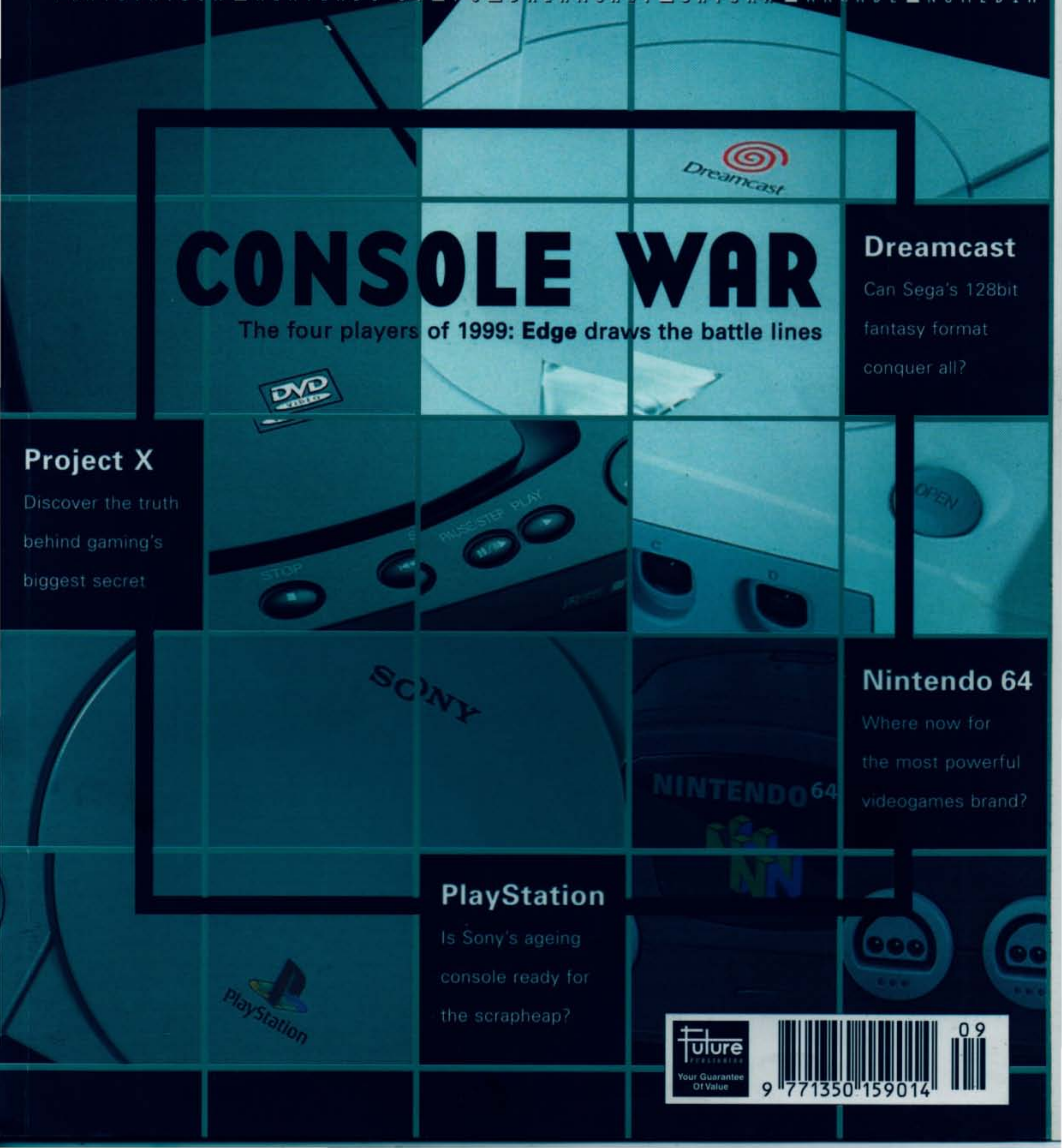
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EDGE

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CONSOLE WAR

The four players of 1999: **Edge** draws the battle lines

Dreamcast

Can Sega's 128bit fantasy format conquer all?

Project X

Discover the truth behind gaming's biggest secret

Nintendo 64

Where now for the most powerful videogames brand?

PlayStation

Is Sony's ageing console ready for the scrapheap?


EDGE



May you live in times of change' runs a well-worn Chinese saying. Across the Sea of Japan, Sony might well be pondering the ancient Oriental curse. The PlayStation's position, which seemed to lazy observers so secure mere months ago, is about to be threatened by Dreamcast. Even the gaijin across the Pacific threaten its dominance with their mysterious Project X strategy.

Of course, last time around Sony was the rank outsider. Such are the fierce sea changes of the videogame industry. Equally, it's almost impossible to predict which platform will have assumed the PlayStation's position three years hence – if, indeed, such a platform has the capability. Sega, a blue-blood heir in gaming, has a head start and will soon boast a raft of titles assembled by a gaggle of surprisingly eager developers. VM Labs, like Sony in 1994, is coming from nowhere. And though it has yet to convince developers, the DVD technology which it is hoping to hitch a ride on has already made its way into millions of American living rooms. Meanwhile, multiple sources assure **Edge** that hard details of PlayStation 2 specifications are mere months away, leaving Nintendo the only player without new hardware. On the other hand, the world's biggest videogames brand will be offering a maturing machine with a wealth of peerless games.

For all these companies, the shuffling of the decks is a tense time. A canny decision or a counterbluff now might equal an extra few million units two years down the line. Yet for true gamers, and for **Edge**, the battle is cheering. Far from splintering the market, these occasional slug-outs give the industry so much of its unique energy and makes videogaming such a stimulating pursuit.

May you live in times of change indeed.

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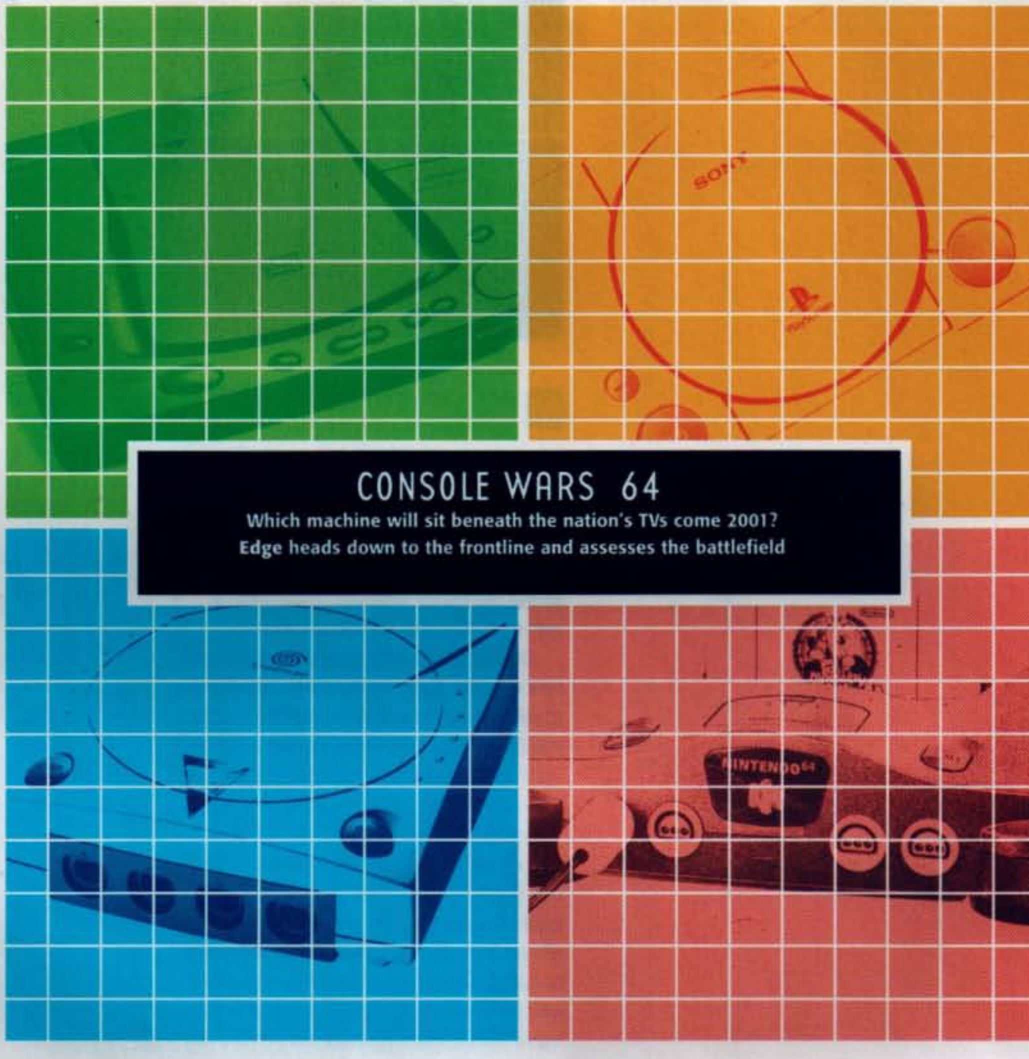
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Which machine will sit beneath the nation's TVs come 2001? Edge heads down to the frontline and assesses the battlefield

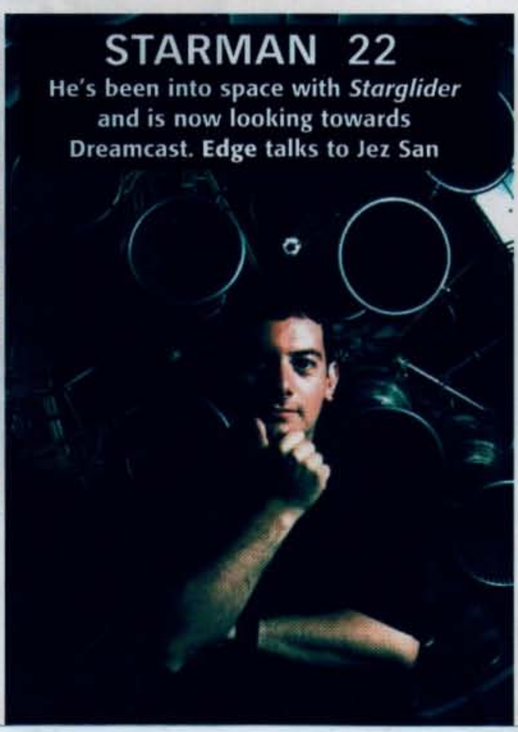


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The most honest, accurate videogame reviews in the world

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MISSION: IMPOSSIBLE



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VIEWPOINT

EXPRESS YOURSELF IN **EDGE** – WRITE TO: LETTERS, **EDGE**, 30 MONMOUTH STREET, BATH, BA1 2BW (email: edge@futurenet.co.uk)

I notice that you are following the old **Edge** tradition of the Mac gaming article (**E**60). Every couple of years you try to convince the gaming public that Macs are excellent machines. You don't need to convince me – I've already converted. However, these articles are seemingly the only mention the system gets in the magazine. I'm not asking for much – we don't need reviews of the identical Mac versions of the PC games, and it is clear that the policy of not repeating reviews is a good one. However, there are some small touches that would be nice. One thing that especially annoys me is that in the format box next to the reviews you seem to never, ever mention that there is a Mac version even when there is a simultaneous release with the PC version. Another irritation is that you occasionally refer to games such as *Myst* and *Sim City* as PC games when they are in fact Mac games that just happened to be converted to the PC...

Tom Fisher,
Huddersfield

Having just read the article in **E**60 regarding Dreamcast I was wondering, does **Edge** not think that Sega has played its hand too soon? With a Japanese release as early as November should Sega have fought the Saturn's corner a little more vigorously while keeping one eye on what Sony was preparing for PlayStation 2?

Although Dreamcast looks very interesting, and way ahead of current machines, will Sony be able to leapfrog Sega as it did before, or has Sega made a big enough leap of its own to ensure that it can't happen second time around? I would be very interested to hear your opinion.

Paul Gee,
via email

It's simply too early to tell whether or not Sega has played its hand too soon – next year will be crunch time – but one thing is especially clear at this stage, and that's the pains Sega has gone to in learning from the mistakes it made with the Saturn. The model it currently has in place looks extremely healthy, and **Edge** is hugely optimistic about the future of the Dreamcast format.

'With a Dreamcast release as early as November should **Sega have fought the Saturn's** corner a little more vigorously while keeping an eye on what Sony was preparing **for PlayStation 2?'**



I think it would be a good idea to produce a MAME plug-in for Web browsers. Users could download games like *Bomb Jack*, which are very small in size (about 100K), from the companies that make the games and pay a small fee for each credit played online. That would make a great virtual arcade and would allow software companies to profit from the renewed interest in their arcade classics. This concept can be extended to new software. Nintendo, for example, could write a Colour Game Boy emulator plug-in so that users could sample the games online prior to purchasing the actual cart.

Frixos Hatjantonas,
via email

A laudable concept on paper, but the gulf that exists between the underground MAME movement and, for example, a company such as Tehkan, *Bomb Jack*'s creator, is such that your proposal would fall apart the moment anyone picked it up and tried to put it together. To **Edge**'s eyes, MAME could never be a commercial concern.

Reading your Develop article in **E**60 on the need for clever methods to be used in order to create hi-res graphics for home consoles, I can see the cause for concern. But, now that game designers are trying to implement hi-res graphics into games, won't we in Europe benefit more from this than Japanese and Americans? As you know, when you play a PC game, you have the option to change the level of detail which can compromise the speed of the game. Why can't this method be used with interlacing when producing console games? For example, having a 625-line resolution with 50-fields-per-second setting and a 525-line resolution with 60 fields, depending on whether you are using an NTSC, PAL or SECAM television. Then, for once, Europeans will actually be getting better conversions than consumers in the US and Japan.

If Mr Irimajiri wants to prove that Sega is no longer arrogant, he should listen to the European consumers. I think that Sega should make this option available with Dreamcast and not just give us lazy PAL conversions.

Anton Heskia,
London

How much the world of computer gaming has changed in 20 years. Well, in some respects. I mean, pick any one of the forthcoming crop of releases and odds are, it will look pretty damn cool. Technologically, I have only one grumble – and that's directed at the PC market.

The environment engendered by the likes of consoles force developers to constantly push the limits of the hardware – it's a level playing field (in a sense). On the PC, programmers don't have to squeeze that extra bit of performance out of the processor, or make the most of the RAM – they just up the

minimum spec and write for the next 3D card or processor.

Scanning the preview columns only a few games seem to try and progress the scope of what's regarded as a computer game. Peter Molyneux's *Black and White* springs to mind. The rest re-work existing models of gameplay, the better ones either offering a twist on the norm, or just excelling at doing the same old thing.

So what really annoys me is that we could be waiting 20 years to experience some really serious games, with far greater scope, when developers could be producing them today.

Vincent Holland-Keen,
via email

While reading your article on MAME in **E**61, a slight feeling that you were contradicting yourselves in terms came over me. In your article you constantly talk about the legality of the MAME project and how this really should not be tolerated, but you also say that you have this program *and* the 'illegal' ROMS and judging by recent issues, a fair few of these ROMS. What really made me laugh was the article entitled 'Other Platforms and Beyond...' where you talk about the N64 conversion and the Doctor 64 'back-up' peripheral and you state 'this [MAME 64] is badly optimised and barely manages a refresh rate of 10-20 fps on even old titles'. This statement begs the question: How did you come by this information? Clearly you yourselves are being a bit hypocritical and in the influencing position you are in you should really not be saying in such blatant terms that you have in your possession 'pirate' copyrighted material. So who out of the readership is going to phone FAST then?

Sam Scott,
Welwyn Garden City

It's called research, Sam.

Having read **Edge**'s review of *Banjo-Kazooie* (**E**61) it is becoming increasingly apparent that Rare's coding abilities are now surpassing Nintendo's own, both visually and technically, but lacking in one key area – gameplay. Look at the evidence: *Diddy Kong Racing*. Despite what **Edge** may say about this game, it simply fails to deliver in the gameplay stakes (or at least match the sheer fun of *Mario Kart 64*). Every time Rare attempts to play Nintendo at its own game, it fails (although wipes the floor with it graphically). This is the reason *GoldenEye* was such a fantastic game – it couldn't be compared to anything Nintendo has put out.

Imagine for a second that Rare had coded *Super Mario 64*, but under the guiding hand of Shigeru Miyamoto: no barren landscapes or repeated textures, full interactive music, etc. This is what Nintendo should have had as its 'Dream Team' – the genius of Shigeru Miyamoto and the coding skills of Rare. Something tells me that this match made in heaven will never be realised.

John Abbott,
via email

Your point concerning *GoldenEye* is a good one, but your *Super Mario 64* argument doesn't really hold water. As the N64's first game it was never going to stretch it in the same way a similarly styled game would two years down the line.

Rest assured, NCL's coders will show you what they can really do with *Legend of Zelda 64*.

I would like to know why you don't ever mention arcade pinball in **Edge** (ie the actual physical machines found in arcades, pubs, etc, not videogame versions).

While I admit that pinball has nowhere near the same interest from the public, or commercial potential, as console/PC games, there *is* an interest. I also admit that pinball interest is far greater in the US than the UK.

As you well know, anyone interested in videogames buys **Edge** – those who want mature analysis, that is. Its slogan is 'the future of interactive entertainment' and yet it *never* mentions or reviews new pinballs (there are approximately five in total released per year). I could argue that pinball is *more* interactive than any videogame could be (at least at present) and also that it is up there with the finest videogames when it comes to longevity and enjoyment. Don't get me wrong, I love videogames, but pin is *so* badly covered here. Would the odd single- or even half-page article about pinball be too much to ask for inclusion in **Edge**?

I wonder how many other **Edge** readers would like a pinball update once or twice a year – the age range at which **Edge** is targeted is typically that of the pinball player – although the pinball player covers a wider age range than videogames. How many other **Edge** readers know that Sega has a pinball division? I don't necessarily expect a change in the content of **Edge**, but that doesn't mean I cannot express my opinions regarding what, to me, is a large omission from a near-perfect read.

Andrew Vevers,
via email

Are there really only *five* new pintables released every year? That should give you some indication as to how limited its appeal is (even though the **Edge** team partakes of the odd session here and there). A pinball feature has actually been in discussion here for some time, but don't hold your breath.

> 'On the PC, programmers don't have to squeeze that **extra bit of performance** out of the processor, or make the most of the RAM – they just up the spec and write for the **next 3D card** or processor'

Although I understand that it is necessary to change the name of certain games for European release, could you possibly explain the reason why *Bio-Hazard* became *Resident Evil*? Are the words *Bio-Hazard* offensive in any way? To be frank, *Bio-Hazard* seems a far more descriptive choice than *Resident Evil*. I really am at pains to understand the logic behind this. Does this name changing incur extra costs to us Europeans?

R Wood,
via email

Suits in Europe preferred the sound of *Resident Evil* – it was simply a question of a European marketing team's preference. Don't worry, it's not really hurting your wallet.

Cutting Edge

The latest news from the world of interactive entertainment

DREAMCAST D-DAY IN EUROPE: SEPTEMBER '99

Sega discusses the console's European release and suggests PlayStation 2 is just around the corner





Sega of Europe CEO Kazutoshi Miyake is confident that Dreamcast has what it takes to win the coming console war

Only a few months after the Japanese announcement of Sega's 128bit Dreamcast console, Sega of Europe has revealed extensive details of its more local plans. SoE CEO **Kazutoshi Miyake** already has ambitions which extend far beyond the console's launch date in Europe, now confirmed for September 1999.

When asked about the current state of development for Dreamcast, Miyake states that, 'We have about 50 companies developing in Europe, around 50 to 70 in America, and 120 in Japan. So altogether about 250 companies have received Set 2 [development kits].' He went on to add another eight names to the list of Dreamcast developers: Infogrames, UbiSoft, Gremlin, EA, DMA, Core, Lionhead and Fergus McGovern's (ex-Probe) as-yet-unnamed new company. Miyake-san also confirmed that the European version of Sega's new console may not contain the modem destined for the US and Japan. But perhaps most significant of all, he revealed that Sony is on the brink of unveiling its own next generation of hardware – PlayStation 2.

Dream games

Although Dreamcast is due to be released next Winter in Europe, Sega has already laid out a fairly comprehensive framework for its new machine's launch. It intends to have around ten titles on day one, the majority of which will be Sega's own games. Beyond that, Miyake-san said that, 'The first three months are very important and we want to bring another 30 titles to the market, including thirdparty games.'

In terms of actual titles underway by European development teams, Miyake-san was able to reveal that Infogrames has around four titles in development, UbiSoft five, and Core Design three. 'We're now discussing with those companies to finalise a publishing agreement,' he adds. Sega is trying hard to co-ordinate developers, in order to maintain a good spread of games. 'Each company has their own speciality,' he explains, 'for instance EA and Gremlin are very good at sports titles, Core is very good at action adventures, and Sega wants to make arcade racing games. We want to allocate these opportunities to all publishers equally, so they can enjoy good profits.'

Miyake was also able to reveal that he's been talking to a number of key UK game companies, including Peter Molyneux's Lionhead Studios. DMA is also working on Dreamcast software, as is parent company Gremlin, and has been subject to several visits from Sega staff. And, while now-departed Probe founder Fergus McGovern has been out of the cycle for a short while, **Edge** couldn't help but notice his name in Sega's visiting book.

No networking?

Last issue **Edge** revealed that Sega of Europe was wavering over whether to include Dreamcast's modem in its





No, it's not a game – this is Sega of Europe's *Future City* demonstration piece, designed to snare potentially interested developers in the Dreamcast net



The demo's lighting effects are superb, created easily via the PowerVR 2G chipset running on Sega's Set 4, 40 per cent power, development kit (see p10)

version of the console. 'Six months ago I could have said that Sega didn't need a modem for Europe for maybe one or two years,' Miyake-san confesses. He goes on to explain, 'That situation has changed so quickly, we are now deciding in our European committee how to position the modem. In Japan and America the modem is built-in, but we haven't decided whether to bundle it or not in Europe. We need to make a decision quickly, because developers are asking whether we will be supporting the modem.'

While it may seem incredible to some that the modem may not make it to Europe, there are crucial differences compared to other territories. American and Japanese gamers are able to make free local telephone calls, a service British Telecom hasn't yet offered its customers, despite increasing pressure. According to Miyake-san, Sega has additional concerns. 'Whenever we launch we have to appeal to core users, the early adopters who don't care about other functions. They care about gaming. So stage by stage, user by user, we have to have a different strategy. Gamers may become confused as to whether Dreamcast is a gaming machine or a multimedia machine, like the PC.'

He is also surprisingly frank about the dilemma Sega finds itself in. 'When I ask myself which I prefer – just the machine, or with the modem at a slightly higher price – I'm lost at what to do. The price of modems is going down very quickly. If the modem is included it's about an extra £30 on the price point at the moment, and there is a psychological allergy towards different price points.' Reading between the lines, it's clear how keen Sega is to release Dreamcast at a sub-£200 price point.



Final Dreamcast titles will have at least another 500,000 polygons to play with. *Future City*'s many particle-generated fires are of particular note

Crucial timing

When questioned about the ten month gap between the new console's ▶



August 22 will see Sega reveal its new Sonic-based title, *Sonic Adventure*. The company is intending to hold a two-day conference in the same vast auditorium used to showcase *D2*

◀ November 20 release in Japan and its September '99 launch in the West, Miyake-san proffers a refreshingly realistic outlook about the possible dates. 'By March people have spent all their money and they're still playing the games they bought at Christmas. I really admire Nintendo, it did a good job, but to generate hype, April is not the optimum month. There's always arguments internally, because some ask why European consumers have to wait a year for Dreamcast. But from a business point of view we want to stay with September. We need enough time for warming up and preparation.'

The real challenge Sega faces – long term – hasn't even been announced yet. Sony's inevitable follow-up to PlayStation is known to be on the operating table deep within the company's R&D department. Miyake is confident Dreamcast has what it takes to fight off the young contender. 'Sony has some advantage as a latecomer. It sees the Dreamcast specification and then it can try and differentiate its product from ours. One area is the modem, and the second is DVD. As for the number of polygons, I don't see what allowance they have. Maybe they'll have five million polygons, but who makes games with that many? No one.' Crucially he adds that, 'The information I have is that Sony is going to disclose its hardware specification sometime next month maybe. And it will start to deliver PlayStation 2 kits early next year.'





In addition to the already available VMS version (see p21) *Godzilla* is coming to Dreamcast. Gameplay details are fairly sketchy, although a similarity to the suggested *Pokemon* N64 link is rumoured

Stopping Sony

An ideal spoiling tactic for Sony would be to make a major PlayStation 2 declaration at next summer's E3 show in Los Angeles. However, Miyake-san claims that, 'We are not so worried about Sony making an announcement at E3, because we will already have launched Dreamcast in Japan six months before. And we plan to have our own exhibition in Europe soon after E3. My plan is to invite key retailers and press, and the major publishers – we'll have our own launch conference. So no matter how much noise Sony makes, we don't mind, because we already have the machine available, we have all the software to show. We presume Sony will come to the market in 2000 – it can't in 1999. Theoretically, it can release PlayStation 2 simultaneously worldwide – that's our only concern.' It's becoming clear that Sega is more than ready to take on the 'power of PlayStation', whatever guise Sony's new machine may take.

Giant steps

Set 2 (previously known as 'Step') is the original dev kit for Dreamcast, running at around 25 per cent of the finished hardware's capacity, and is in the process of being superseded by Set 4. This new edition of the dev kit is far more powerful, capable of around 600,000 polygons per second with all graphic effects enabled. It's this kit that was used to create and display the Japanese launch demonstrations for Dreamcast. The final version, Set 5, is already in the hands of leading Japanese companies and will be filtering through to the UK soon.

All companies will receive Set 2 free of charge, although Sega is retaining ownership – and will reclaim the unit if a game's quality is thought to be not up to scratch. Set 5 will be charged for, and is to cost around US$6,000, although the version for graphic artists is likely to be cheaper. Sega-owned Cross Products is manufacturing the dev kits at its Leeds base.







More details of NEC's highly colourful *Sengoku Turb* are beginning to emerge from Japan. This issue's Prescreen Alphas reveals more – see p30

NINTENDO PRIORITIES SHIFT AS 64DD FLOUNDERS

64DD takes a back seat as Nintendo prepares to focus on its Game Boy strategies

With the Japanese release reset to November and a US date postponed indefinitely, the uncertain course of the 64DD continues, gathering ambiguity and confusion in its wake. Having announced in March that *Zelda* would initially appear as a non-64DD title – fuelling rumours that Nintendo was losing faith in the storage device – the company has now gone ahead and included 'software hooks' for its floundering peripheral in *F-Zero X*.

This news is typical of how matters have transpired with the device so far. When the game was first being touted as a 64DD compatible cartridge, Nintendo planned to release a 64DD add-on disc containing extra circuits, cars and a track editor. These plans appeared to have been abandoned when *F-Zero X* was released last month in Japan – well ahead of the intended 64DD premiere. However, the game's end credits include a mention for two DD programmers, and, more importantly, when the cartridge is plugged into an N64 attached to a 64DD test unit, the game attempts to access the drive and download data, as soon as the user inserts a 64DD disc. The 'software hooks' (ie, the code that communicates between the cart and the 64DD drive) are in place.

Unfortunately, this does not guarantee that an add-on disc for *F-Zero X* is in production. It does not even confirm that the 64DD device is certain to be released at all. The software hooks and DD credits may just be a throwback to Nintendo's original plans, simply left in the cartridge release. The company's failure to comment either way hints at a continuing internal uncertainty over the whole 64DD question; an uncertainty which – along with the recent news of poor N64 sales figures – will no doubt play right into the hands of Sega and its Dreamcast offensive.



64DD technology has long been complete, yet Nintendo is finding it difficult to commit to the new storage format

N64 in the picture

Meanwhile, Electronics company Tokyo Electron Device is set to release its N64 photographic suite, *Photopi*, in November. The *Photopi* cartridge, which slots into the regular game cart slot – is essentially a kind of *Photoshop* package. Owners simply take a selection of pics on one of the compatible Fuji or Sanyo digital still cameras, remove the camera's smart media card (ie, the card that stores the photos) and place it into one of the cart's two available slots. It is then possible to manipulate the images onscreen, using a simple icon-driven interface. Users can add text and other modifications, and turn the photos into birthday cards or postcards before saving them back to the smart card. This is then taken to a photo service shop where the images are converted into high quality colour prints. The second slot on the cart can house another smart media card, allowing users to swap digital stills between them.

Interestingly, *Photopi* – like *F-Zero* X – was originally designed for use with the 64DD (which would have provided a huge storage unit for digital photos). Although the products may retain compatibility with the device, the fact that *both* have been released early hints at the unlikelihood of it ever seeing the light of day. Whatever the case, this premature evacuation of 64DD titles could well set a mode for other long-delayed projects. ▶



The Colour Game Boy (or 'Game Boy Color') looks like it may overshadow Nintendo's plans for its 64bit superconsole





***Legend of Zelda 64* (left) was one of the first 64DD-compatible titles announced by Nintendo, although it will launch in cartridge format on November 23 in Japan. The recently released *F-Zero X* (right) actually includes 64DD 'support'**

Game on

Perhaps in an attempt to steer attention away from all this negativity, Nintendo is busy promoting the imminent release of its Colour Game Boy. The latest version of this successful handheld, retains the original's Z-80 processor, but doubles the clock speed to 2MHz and the screen buffer to 16K. It also has three colour modes, of course. Other new additions include an infrared data link, replacing the linkup cable of yesteryear, and a sound input port, which may well hint at some future sound recording and manipulation peripheral – rather like the recent Pocket Camera, except with sound, not pictures, of course.

However, perhaps the most interesting Colour Game Boy news to surface this month appeared at the N-Wave developers' conference, held recently in the States. Here Nintendo revealed that up to four colour Game Boys can be linked together for the purpose of splitscreen gaming via a TV.

This is achieved by connecting the machines to an N64 through the controller ports – the console then acts as a kind of network server, relaying information between the Game Boys and sending the signal to the TV. Not only will this open up many multiplayer doors to developers, but the Game Boy could also be employed as an N64 smart pad – mimicking Dreamcast's VMS memory units.

As reported in last month's **Edge**, the Colour Game Boy will retail for ¥8,900 (£45) when released in Japan in September. A US version will follow in November with a price tag of $80.

Colour Game Boy

Processor:
Z-80 chip running at 2MHz

System RAM:
32K

Screen buffer:
16K

Display modes:
10 colour, 32 colour, 56 colour (the latter allows 32 background colours and 24 sprite colours)

Total palette:
4,096 colours

Power:
Two AA batteries, providing up to ten hours of play

AND THE WINNER IS…?

Bashful coders hide from BAFTA

BAFTA Awards

Of 13 BAFTA categories, six are of particular relevance to videogame design and creation:

1. The Games Award
Best computer game

2. The Sound Award
Best use of sound in an interactive work

3. The Design Award
Most innovative art direction in an interactive work

4. The Computer Programming Award
Award for innovative use of computer programming

5. Best UK Developer

6. Best Personal Contribution to the Industry

For the first time BAFTA (the British Academy of Film and Television Awards) is to reward achievements in Interactive Entertainment. But unfortunately Britain's developers are shying away from entering the fray.

Specifically, while publishers have been happy to nominate titles for Game of the Year Award, there has been far less response to the artist, designer and sound categories and almost no entrants for the Computer Programming Award.

Peter Molyneux, CEO of Lionhead, who represents the game industry on the 11-strong awards committee, finds the situation distressing. 'I'm really keen on what they call the craft awards,' he reveals. 'It's so unfair that games are awarded – and the people that actually do the games, the programmers, the artists and the sound people never really get any mention.'

Molyneux isn't sure why the industry's creative talents – particularly the programmers – are quite so reticent. 'Perhaps the main reason is that this industry doesn't really recognise programmers – unless they're media-hungry programmers like myself.'

As long-time champions of the individuals which drive gaming forward, **Edge** shares Molyneux's concerns. Particularly worrying is the lack of media awareness that BAFTA has generated, and the lack of a marketing budget to actually inform developers of the Academy's commendable aims.

Asked whether developers might have been put off by the lack of games industry representation on the steering committee, Molyneux is non-plussed. While he is the sole representative of gaming among the board, a specialised gaming panel will select the awards themselves. 'They just don't want the games to swallow it all up. It's easier to judge how successful a game is rather than a Web site.' Besides, a panel of film experts judged early television awards he points out.



Peter Molyneux is keen for the industry to apply for the BAFTAs

Molyneux urges developers to seize the gauntlet. 'I'd really like to see some of the new talent that's coming out applying,' he says. Even in this day of large development teams, he believes there are still standout individuals. 'I would love individuals to be put forward. There are still programmers who are real heroes,' he says.

Any programmers, artists or designers who believe they have what it takes should head to www.bafta.org for more details.

Cutting Edge Cuttings

GAME OVER FOR GAMETEK
US West-coast-based company GameTek has closed following a troubled financial year. In 1997, the company filed for bankruptcy and underwent a major financial reorganisation in order to publish *Robotech* for the N64, with distribution assistance from Capcom. Now that GameTek's offices have shut, the game looks unlikely to be released.

THEY'VE KILLED TUROK!
With everyone currently going 'South Park' mad, Acclaim's decision to release an N64 game based on the popular eight-year-old delinquents wasn't a shock. The game will be a firstperson shoot 'em up running on the *Turok 2* engine. The deathmatch version should prove humorous, as players run around shooting snowballs, boxing gloves and cows at each other.

RETURN OF THE BANJO
According to Rare, *Banjo-Tooie* (as revealed at the end of *Banjo-Kazooie*) is an entirely new sequel currently expected to be released some time during 1999. In an interesting move, the areas in *Banjo* that remain locked even after the game's completion will only be accessible after playing its follow-up. Hopefully, other innovative features will also feature prominently.

ONLINE GAMES SUMMIT

A new conference promises to further the art (and profitability, its delegates will surely hope) of online gaming

This October, the industry's leading authorities on online gaming will converge in London for the Online Games and Interactive Sports Summit '98. With multiplayer online gaming still promising far more than it delivers, the conference could be the perfect catalyst for further advances in the field.

After all, it's chastening to remember that hardly anyone has made any money yet online. Most of those who *have* will be represented at the summit. Notable attendees will include Neil Harris, vice president of Simultronics; Jon Grande, executive producer of Microsoft's Internet Gaming Zone; Colin Duffy, head of games at Wireplay; and even Richard Morris from London's American football team, the England Monarchs.

Topics under discussion include online advertising, interactive sports, gateways and charging for games. There are also sessions on often overlooked aspects of the business, such as protecting trademarks online and Java development. **Edge** will bring a full report from the conference and its implications in a later issue.

Tickets to the Online Games Interactive Sports Summit are strictly limited. For more information, call the organiser, SMi, on 0171 252 2222.

WORLD OF ATARI

Atari fans gather in Las Vegas for the retro show of the year



Hey, free comic book – you just don't get that stuff nowadays…

Old consoles never die, they become objects of obsession, it would seem. August 21 witnesses the first Classic Video Game Show and Exhibition, being held at Las Vegas' Holiday Inn Boardwalk Hotel. Tagged 'World of Atari '98', the two-day event will feature a number of famous names from Atari's glory days, with large crowds of fans predicted.

The retrogaming trend has far outlived predictions, becoming an international facet of the videogames industry. However, World of Atari '98 suggests a level of dedication from its organisers and attendees that goes beyond purchasing the latest *Atari Greatest Hits* collection. Those that make the journey will face a plethora of Atari-related memorabilia, either to admire or purchase from the bring-and-buy section. Fondly remembered hardware, including the Atari 2600 (aka VCS), 5200, 7800, 400/800 computers, ST, Lynx and the '64bit' Jaguar will be available for perusal.

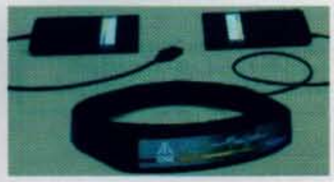
Of the ex-Atari guests due to make an appearance, Howard Scott Warshaw is being loudly trumpeted by the event's organisers. Warshaw created the 2600 versions of *Yar's Revenge*, *Raiders of the Lost Ark* and the infamous *ET*. He will be rubbing shoulders with Bill Kunkel, who founded the world's first games magazine, *Electronic Games Monthly*, and Steve Woita, responsible for *Taz* and *Quadrun* for the 2600, and *Sonic Spinball* for the Mega Drive.

According to the show's Website (www.atarihq.com/atari98), several hundred tickets have already been sold. But, these are Americans in Vegas, and under those conditions, well, anything can happen…



Howard Scott Warshaw will be on hand to talk about 'classics'





The three-day event will showcase all manner of Atari memorabilia, from the classic VCS joystick to some more experimental kit (right)

NEW GAMES PLEASE

Together with Sega, Konami, Capcom, Namco and Square, SCEI is suing Act, a major Japanese retailer, for the sale of secondhand software across its 300 national stores. The six companies seek to ban the distribution and sale of used titles, claiming it represents an infringement of Japanese copyright laws. The result could have a drastic effect on the videogames market.

EA FORCE

Second-quarter software sales figures recently published by ChartTrack again show Electronic Arts ahead of its competitors with 14.2 per cent of all sales, followed by Sony Computer Entertainment's 11.6 per cent. Virgin, no doubt helped by *Resident Evil 2*'s popularity, has claimed third spot with 8.4 per cent. With 6.8 per cent, Nintendo brings up the rear.

GOLDENPACK

Following Sony's announcement of its £150 *Gran Turismo* and Value Pack bundle, THE is currently tempting potential N64 owners with a special *GoldenEye* edition. At £130, it features Nintendo's 64bit machine, a gold-coloured controller and Rare's firstperson masterpiece. Initially, 30,000 units will be available and a 60 per cent increase in sales is expected.

SUMMER GAMES 2

Following an overwhelming response to its *Net Yaroze* programming short course in July, Middlesex University has announced a second five-day introductory course, covering the implementation of 2D and 3D game features. At £164.50, the course is priced with students and hobbyists in mind and runs from August 17 to 21 – provided at least 25 individuals apply.

(out there)

REPORTAGE FROM THE PERIPHERY OF THE VIDEOGAMES INDUSTRY

Nintendo stars in sex film



It seems no one in the videogame industry is content to just churn out digital entertainment any more – everyone wants to get into the movies. Interplay, for example, recently announced a new film production department set up soley to pitch ideas at Hollywood (see Out There, **E**60), and now Nintendo has become involved with a forthcoming British film called 'Virtual Sexuality'. The picture, due to hit cinemas in early '99, stars Laura Fraser ('Small Faces', 'The Man in the Iron Mask') as a girl who finds herself transported into the body of her ideal man when a virtual reality attraction goes horribly wrong. The action takes place at a computer games fair which will be dominated by a huge Nintendo stand complete with dozens of consoles and a massive videowall showcasing the latest titles. Plus, while the lead character goes through what sounds like some sort of kinky wish-fulfilment crisis, characters from the *Mario* games will wander around in the background.

Although it was perhaps inevitable that Nintendo would again get involved with movies (following 'The Wizard' and 'Super Mario Bros.'), **Edge** could never have predicted it would be one with 'Sexuality' in the title. Is this the beginning of a new sexually enlightened era for the big 'N', or could it be the latest implicitly subversive move from a company which has already brought the world the double-entendre-rich Game Boy?

Joyous Jordan



Joytech's Jordan Formula One team-licensed steering wheel: better than a cruddy old joypad

To launch its Jordan Formula One team-licensed steering wheel, peripheral specialist Joytech invited selected members of the gaming press to attend an exclusive champage breakfast with Eddy Jordan at his team's Silverstone-based headquarters, just prior to the British Grand Prix weekend.

Except Eddy didn't show up, instead having to spend most of the day attempting to secure his team's Honda engines after Jordan driver Damon Hill allegedly made a potentially damaging remark regarding his car's propulsion system. No Eddy then, but a tour of the factory and a visit to the Jordan pit lane garage more than made up for the Irishman's absence. And while **Edge**'s attempt to hide in a pile of disused tyre warmers with the all-areas VIP pass firmly in hand as a means of attending the weekend's proceedings failed, former F1 driver Andrea Montermini had sneaked into Jordan's HQ and was putting Joytech's PS wheel through its paces courtesy of Psygnosis' *F1 '97*, and had some very impressive lap times to show for it by the time he finished.

If only Jordan driver Ralf Schumacher spent a little time doing the same he may actually get through a whole GP weekend without crashing. Or taking his brother Michael out of the race...



In the absence of Eddy Jordon, Andrea Montermini stepped in to give Joytech's wheel a crack

So Ferrari, so good

This month's hi-octane theme continues as Hewlett-Packard and digital communications agency Global Beach announced the release of HP JetSpeed, a fun, top-down racing challenge and screensaver for PC owners with the purpose of demonstrating the benefits of HP JetDirect print servers. To celebrate the event, Global Beach parked its Jaguar XK8 and Ferrari F355 (the company competes regularly in the Ferrari-only Maranello series, also frequented by ex-Psygnosis boss Ian Hetherington and his F50 supercar) at Future Publishing's headquarters and proceeded to hold a competition using networked laptops. Having been told the winner got a spin in the F355, **Edge** applied all of its digital racing knowledge to post the day's fastest lap in the last few minutes of play. And while Bath's notorious rush-hour traffic tried its best to dampen the Italian machine's power, a brief stint on a nearby dual carriageway was enough to inspire the idea of an **Edge**-sponsored F355 appearing in next year's Maranello championship...



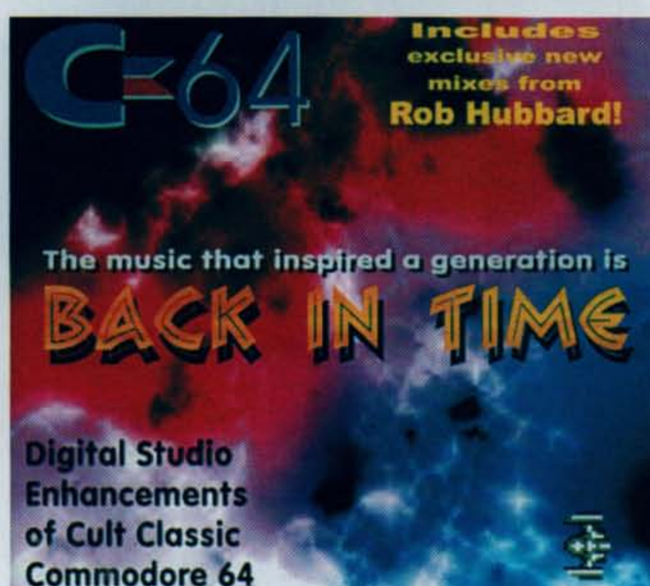
Bath isn't especially suited to driving at high velocity, frankly, so HP couldn't really hammer home the 'speed' part of the JetSpeed message. Oh, and they kept the publicity plates on on public roads. Doh

The sound of SID-ness

So inspired by the scritch-scratchy delights of 1980s Commodore 64 game music was Chris Abbott that he got off his arse and decided to drag it into the '90s. It's taken him and various cohorts two man years' worth of work, but his labour of love has surfaced in the form of 'Back in Time', a CD containing just over 70 minutes of remixed SID-chip tuneage. The tracklisting reads thus:

Delta '97 (Hubbard)
Rambo – First Blood Part 2 (Galway)
Sanxion (Hubbard)
Thing On A Spring (Hubbard)
Parallax (Galway)
Auf Wiedersehen Monty (Daglish/Hubbard)
Mutants (Grey)
Great Giana Sisters (Huelsbeck)
Monty '97 (Hubbard)
Arkanoid (Galway)
Ocean Loading Theme (Clarke)
Wizball (Galway)
To Be On Top (Huelsbeck)
Crazy Comets '97 (Hubbard)
Delta Victory (Hubbard)

A quick spin of the disc in the **Edge** office elicited various responses along the lines of 'Oooh, I recognise that, no, don't tell me, I know it...', as it surely will to any crusty 8bit game fan. Of the 15 tracks, standouts include Fred Grey's chilled *Mutants*, Martin Galway's inspired *Wizball* and *Parallax* themes, and, naturally, Rob Hubbard's seminal *Sanxion* loading music. What happened to Tim Follin's work, though? Maybe a second volume will address the anomaly.



'Back in Time' can be ordered by phone on 0500 131486, or via the Internet at www.c64audio.com, at the price of £12.99 plus £1.00 p&p

NUMEDIA

A MEETING POINT FOR MEDIA CAPITALISING ON THE DIGITAL ENTERTAINMENT REVOLUTION

GADGETS



Sony MZ-R5ST

The problem with MiniDisc is that until the hardware becomes more affordable, few people will want to buy more than one machine. But should you buy a hi-fi separate or a portable?

Sony has decided that this is too hard a decision for consumers to make, hence the introduction of this: an MD Walkman recorder with a base station so it can be used either on the move or as part of a hi-fi system.

It's got full MD editing facilities, though only from the base station, and on its own the Walkman can be a little fiddly, but in either mode it sounds fantastic.

£500 **Sony Tel: 0990 111999** Out now



Panasonic DVD-L10

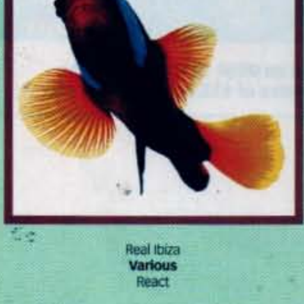
Of all the companies backing DVD, Panasonic is by far the most enthusiastic. Its first machine – the DVD-A100 – was launched a year ago, with thirdparty manufacturers using this and subsequent machines as a basis for their own designs.

Panasonic has now upped the ante with the launch of this, the world's first portable DVD player. Not much bigger than a CD portable, the DVD-L10 comes with a colour LCD screen, remote control and rechargeable battery pack that provides enough power for the user to sit through an entire DVD movie.

Despite the overt gimmickry, picture and sound quality is surprisingly good – and there's sufficient onboard socketry to enable it to be rigged up to a full-size TV or home cinema system. But can there really be a market for gadgets like this?

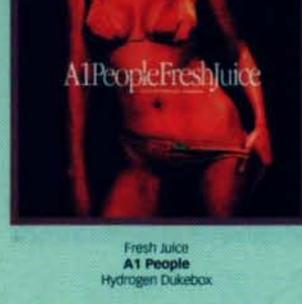
£1,000
Panasonic
Tel: 0500 404041
Out now

MUSIC



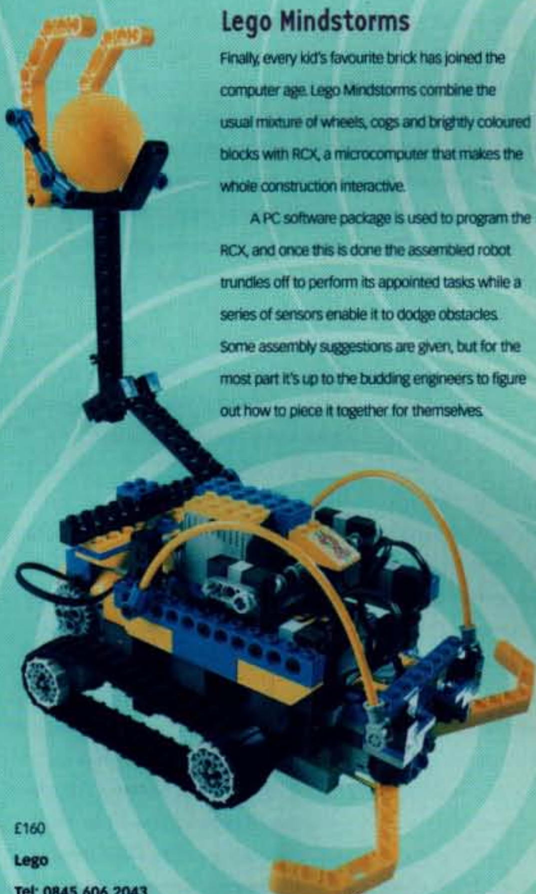
Real Ibiza
Various
React

The name has changed, but the Café del Mar connection remains, with mixing duties from resident DJ Bruno and Jose Padilla himself. Elsewhere there are signs that the theme is running short on material. The predictable elements, such as the token acoustic guitar track and another dose of A Man Called Adam are actually among the best, though the stunning 'Cinematic Sundown' from Los Olividados adds extra zest to the formula. Less welcome, though, are a handful of cuts that suggest a '70s flashback more than a Balearic summer. Ultimately more hit than miss, though not nearly as essential as the early Café del Mar compilations.



Fresh Juice
A1 People
Hydrogen Dukebox

Purveyors of bubbling funk, A1 People manage to appropriate all the best elements from old hip-hop, funk and electro scenes, throwing them into the mix with an equal number of new dance influences to create a sound that's both cheesy and irresistible. The live band format, taking in vocoded vocals, choppy funk guitars, Kraftwerk clockwork sequences and Bootsy Collin-style bass, adds to that weekend party sound. It's a winning formula, and while the 'Fresh Juice' can't sustain the sticky, sweaty pace for the duration, it's a great way to dip a toe or more into the sound currently grinding in the sweatier corners of the capital.



Lego Mindstorms

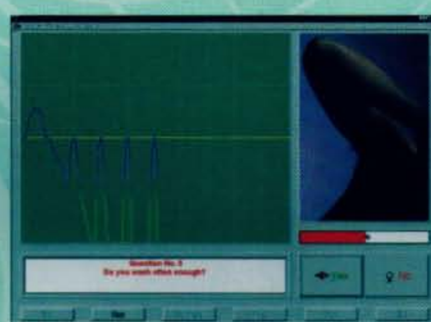
Finally, every kid's favourite brick has joined the computer age. Lego Mindstorms combine the usual mixture of wheels, cogs and brightly coloured blocks with RCX, a microcomputer that makes the whole construction interactive.

A PC software package is used to program the RCX, and once this is done the assembled robot trundles off to perform its appointed tasks while a series of sensors enable it to dodge obstacles. Some assembly suggestions are given, but for the most part it's up to the budding engineers to figure out how to piece it together for themselves.

£160
Lego
Tel: 0845 606 2043
Out now







Lie Detector

During the risible erotic thriller 'Basic Instinct' it transpires that 'cop on the edge' Michael Douglas has beaten a lie detector test during an Internal Affairs interrogation. At this point, many people in the audience no doubt thought to themselves, 'Well if that tiny-brained bovine lothario can do it, surely anyone can?'

Well, for those still intrigued by the whole Polygraph question, Black Friar Software has developed a PC lie-detector test – complete with skin conductivity sensor. This strange piece of equipment is connected at one end to a free serial port and at the other to the index finger of the victim's left hand. The finger sensor then measures the skin's electrical conductivity, which is affected by perspiration and pulse rate – both thought to increase when a person lies.

Of course the real fun begins after the sensor has been fitted and calibrated. The game asks the player a series of difficult questions (mostly based around love, sex and moral scruples), and a graph displays the subject's skin conductivity. If the lines goes up it means the user is becoming excitable – a sign that they may not be telling the truth. Owners can chose from a selection of eight themes (Life, Sex, Conscience, Society, etc), or input their own questions, together with images to 'stimulate' the subject.

But does it work? Though Black Friar claims the hardware is 'ultra-sophisticated' it doesn't react particularly quickly or sensitively to differing answers. Lie to the first question and the graph can remain in an agitated state throughout the test even if you tell the truth from then on. However, for £20 this is an amusing diversion – and who knows, the 'conductivity sensor' could become a regular peripheral, with progress through each game dictated by which elements of the title stimulate the player. **Edge** can see it now... The firstperson excite 'em up...

£20
Anglia Multimedia
Tel: 0171 579 4103
Out now



Heavenly
e-dancer
Play It Again Sam

Another alias for Keven Saunderson (aka Inner City and Reese Project), the man credited alongside Juan Atkins and Derrick May for creating Detroit techno. Bringing together the material from various 12"s recorded under the e-dancer guise, 'Heavenly' adds further clout to the already impressive credentials with remixes from Atkins, Kenny Larkin and Carl Craig. They help to expand the sound even further, the likes of 'World Of Deep', 'Feel The Mood' and 'Heavenly' blurring the distinctions between house anthem and cerebral techno. Though the mood may be dark, there's no arguing with Saunderson's mastery of electronica.



The Spirits Inside Me
Jori Hulkkonen
F Communications

Listen to latest effort from Finland's Hulkkonen and it's clear he'd about as far removed from Eurotechno as it's possible to be. Opener 'Nitewalking' sums up the style: gentle grooves and easy, minimalistic jazz forms.

It makes for an album even more laid back than most F Communications material; the manner in which trumpets and more artificial sounds drift in and out of focus lends the tracks a suitably ethereal air. The only problem is that this subtle approach tends to leave attention wavering whenever the beats get just a little too relaxed – unless the listener feels that modest life isn't rubbish.

DVD

Batman & Robin

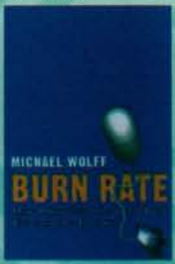
By far the worst of the recent Batman adventures to come out of Hollywood, Joel Schumacher's 'Batman and Robin' still makes surprisingly compelling DVD viewing. Not, of course, as a result of the incomprehensible narrative or the weak, lifeless acting, but rather as a result of the visual quality resulting from this DVD pressing. The film's generous use of primary colours might play havoc with VHS transfers, but chroma noise is not something a DVD disc is concerned with. The resulting widescreen picture is therefore rather impressive. Good, too, is the accompanying Dolby Digital soundtrack, with a hugely dynamic soundstage which includes a decidedly deep bass extension and plenty to keep the rear effect speakers occupied.

Possibly of more interest than the film itself are the extensive production notes which range from Batman's origins to this film's special effects and crew members' biographies.



Warner Home Video
£16
Out now

BOOKS



Michael Wolf
Publisher: Weidenfeld & Nicolson
ISBN 0-297 84261 7
Price: £19

Burn Rate

Subtitled 'How I survived the gold rush years on the Internet', 'Burn Rate' chronicles the venture capitalist frenzy that overtook the Internet in the mid '90s, as seen through the eyes of 'NetGuide' creator Michael Wolff. At one glorious point, his company was valued at $150 million; not bad considering it was losing half a million a month. As he explains, in that superheated environment, the bigger the burn rate (the amount of money needed per month to keep it afloat), the bigger a company's perceived value.

Wolff's journalistic background enables him to maintain a frantic pace while providing a detailed overview of the corporate rise of the internet. Much of the criticism of the industry is deeply cutting: everybody believes in the Internet, but no-one can explain why it is important, what they are going to get out of it or why they should be on it. Key players such as AOL and Time loom large and stupid throughout – and the epilogue holds Microsoft's Internet vacillations up for gleeful mockery.

What makes this more than just a pacy history, however, is the clarity with which Wolff grapples with the Internet's fundamental problems. It does not provide content and is more akin to the telephone than the magazine. For Wolff, the conclusion is a gloomy one: this is a new publishing medium that no-one reads. 'Burn Rate' could be the most important book you will read this year. Who says print is dead?



Tor Norretranders
Publisher: Allen Lane
ISBN: 0 713 99182 8
Price: £20

The User Illusion

Ever since Descartes opined 'I think, therefore I am', the relationship between the physical and the mental has vexed the greatest thinkers. The invention of the computer caused a fundamental shift in the way the issue is viewed and now, after 40 years of research, the brain and the computer are seen as being synonymous. Small wonder that the downgrading of the human brain remains a powerful cultural myth, spanning HAL in '2001' to the replicants of 'Blade Runner'.

The thrust of Norretranders' book is to apply these themes to that most elusive of attributes: human consciousness. Just as a PC user has no understanding of the code that powers his *Quake* bloodfests, so the 'user illusion', applied to consciousness, protects us from the primary data gathered by the brain. For Norretranders, the purpose of the brain is ignoring information, or as he labels it, 'exformation'. The problem of modern society thus becomes the lack of primary information provided by computer screens. Data workers become quickly bored by the lack of exformation despite the overwhelming amount of information.

Unfortunately Norretranders fails to develop his argument convincingly, merely repeating well-worn themes. New technology is bad. We should swap our consoles for books. Another illusion is reinforced.

MUSIC



Actual Sounds + Voices
Meat Beat Manifesto
Play It Again Sam

Jack Dangers' work still goes largely unnoticed in the UK, yet he's influenced such bankable, chart-friendly stars as The Prodigy and the Chemical Brothers, and been sampled by the likes of Fatboy Slim and Future Sound Of London. Although not as commercial as these acts, there's much here to enjoy – the album was honed down from 60-odd hours of live studio work. With a wonderfully eclectic range – 'Prime Audio' blends dub and big beat, 'Oblivion' is almost indie-pop, and 'The Thumb' finds jazz rubbing shoulders with the usual Meat Beat experimentalism – the Manifesto has never sounded so persuasive.



Hello Nasty
Beastie Boys
Grand Royal

The cheap and cheerful single 'Intergalactic' suggests the Beasties have gone back to basics, far away from the instrument-laden stew heard on their last album four whole years back.

Don't be fooled, 'Hello Nasty' is just as playful, diverse and essential. The rapping is naturally as coarse as ever, but the way the trio fire out musical styles, lyrical themes and smart couplets like machine gun fire is faultless. Flutes, '70s funk, latino beats and even classical music all get a look in, the generous 22 tracks suggesting the band have been anything but idle. Rumour has it the next record will be a country album. Be very afraid.

[BIG IN JAPAN]

PlayStation gets the Beat

It seems the PlayStation is becoming something of a tool for aspiring musicians rather than a mere plaything for idle gamers. Last year saw the release of *Depth*, the underwater music creation title (renamed *Fluid* for Europe – see Out There, **E**61), and now Konami is converting its arcade favourite *Beatmania 2nd Mix* to Sony's console. Cashing in on the current cult of the DJ, the *Beatmania* coin-op features a literally revolutionary 'turntable' controller which players use to scratch and cut along with a dance track. If their timing is – ahem – up to scratch, they progress onto the next banging choon – each one accompanied by suitably hypnotic visuals. The cabinet can also accommodate two players for collaborative mixing.

Since its release last year, *Beatmania* has gained a massive following with the chic young gamers of Tokyo's trendy Shibuya district. Large crowds gather around experienced players, and some otaku have dedicated their arcade-dwelling lives to the game – a few even performing dance routines along to the music. In fact, many Japanese gamers now use *Beatmania* to show off their DJ techniques rather than to actually play the game. It is even rumoured amorous young high-school mixmasters are using their prowess on the wheels of steel to pick up girls – which perhaps explains the coin-op's huge popularity. No amount of ingenuity in *Virtua Fighter 3* is likely to impress the ladies as much as this.



One turntable and five buttons: ASCII's dedicated *Beatmania* peripheral. The finished game might be compatible with a standard PlayStation joypad, but who could resist an add-on as clearly essential as this?

The PlayStation conversion, due out in Japan on September 24, will include 27 tracks: 19 from the arcade and eight original to the console version. Each track offers five levels of difficulty, depending on the skill and dexterity of the player, and various musical genres are represented including reggae, hip-hop, ska and breakbeat. As for the control device, ASCII (the company responsible for the modified *Resident Evil* pad) has produced a special 'turntable' controller which will retail separately for ¥5,800 (£30). Konami has also added a training mode and a 'DJ Demo' mode, so players can save their finest scratchings for prosperity. Although at home, without the hordes of admiring fans and easily impressed girls, this aspect may lose a little of its appeal.













Beatmania's gameplay follows that of _Parappa the Rapper_ to a degree, as players attempt to match an oncoming flow of 'digital-sheetmusic' instructions. Whacked-out graphics accompany the different tracks

THIS MONTH...
BIG BEAT MANIA
GODZILLA ON VMS
SEGA STANDS TALL

Monster madness

Sega has released its first game for Dreamcast's Visual Memory System, demonstrating that the device is set to enjoy a strong identity of its own as a handheld console. *Atsumete Godzilla*, a new spin on the hugely successful *Pokemon* Game Boy series, was launched on July 11 at the Toho Movie Theatre – a venue selected because Toho produced and distributed the original 'Godzilla' movies. The game was released to regular retailers later in July and is selling for the bargain price of ¥2,500 (£12).

As for the content, it's standard *Pokemon* stuff all the way. The player first gets to choose from four different difficulty levels, and then has to raise the resulting monster from harmless egg to ravenous dinosaur. Along the way it's also possible to select a mini game named 'Gekitsui' in which the player has to move Godzilla up and down to avoid incoming missiles; each time a projectile is successfully dodged, the tiny leviathan gets bigger and stronger. Other modes allow players to check out the Godzilla's DNA (ie, his character stats) and to consult a guide listing the various types of monster it's possible to rear. The latter gives users the chance to assess creatures they may well come up against in future battles.

And of course it is the battles that make up the main part of the game. For this final element, two players connect their Visual Memory Systems together and pitch their little monsters against each other. The winning monster gets to steal the other's DMA. It's hardly an original concept, but considering the success of the *Pokemon* phenomenon it's difficult to blame Sega for cashing in.

In fact, Sega is actually cashing in twice. At almost the same time as *Atsumete Godzilla* was premiered, the company also announced a Dreamcast version of the game. Dreamcast *Godzilla* will of course feature 3D rather than small bitmap monsters, but will also be compatible with the VMS game, so that players can upload their beastly creations from the small handheld to the main console. Size, it would seem, really does matter.





The recent TV ad campaign (top) seems to have worked. Images from the PDA 'game' (above)

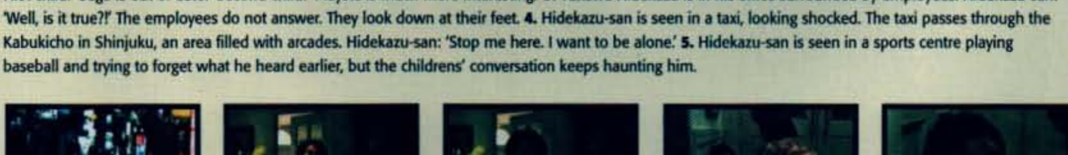
Sega gets last laugh

Japanese videogame bosses are not usually known for their self-deprecating humour, so it must have come as a huge surprise to gamers when Sega's senior director, Yukawa Hidekazu, appeared in a hilariously ironic TV ad just days after the Dreamcast announcement. The commercial, which will only ever be shown in Japan, shows Hidekazu-san overhearing a group of children declaring that Sega is out of date and that a console called 'Playsta' is where it's at – Playsta being a thinly modified version of 'Plasta': a nickname for PlayStation used by SCE in its own commercials. This sets the beleaguered director off on a self-destructive trawl through the Tokyo streets, finally collapsing beaten and bewildered in front of his wife. Although the Saturn is never actually named in the ad, it is painfully clear this is what the kids were berating, and by acknowledging the machine's 'death' in such a comic and public manner, Sega is cleverly sending out a clear message of arrogant self-confidence to Sony, and to gamers in general. If only Sega Europe could manage an ad half as bizarre, eye-catching or downright cheeky.

These are highlights from the TV ad:



1. Voiceover: 'Today, Yukawa Hidekazu, senior director at Sega Enterprises, hears a surprising conversation in the street'. **2.** He turns to see two children talking. First child: 'Sega is out of date!' Second child: 'Playsta is much more interesting.' **3.** Yukawa Hidekazu is in his office surrounded by employees. Hidekazu-san: 'Well, is it true?!' The employees do not answer. They look down at their feet. **4.** Hidekazu-san is seen in a taxi, looking shocked. The taxi passes through the Kabukicho in Shinjuku, an area filled with arcades. Hidekazu-san: 'Stop me here. I want to be alone.' **5.** Hidekazu-san is seen in a sports centre playing baseball and trying to forget what he heard earlier, but the childrens' conversation keeps haunting him.



6. Hidekazu-san stumbles through a dark back street, apparently drunk. Inadvertently, he bumps into a member of the local Yakuza. Hidekazu-san: 'Damn...' Yakuza member: 'Hey you!' Hidekazu-san: 'Shut up!' Yakuza member (evidently more than a trifle upset): 'Say *sorry*!' **7.** Back home, Hidekazu crashes into the entrance hall of his family dwelling. His wife appears. Wife: 'Welcome home!' **8.** She appears shocked as he slumps to the floor. Wife: 'What happened?!' **9.** Hidekazu-san's wife draws closer to her husband, who is lying beaten and drunk on the floor, and attempts to tend to his abrasions. **10.** Just as the Sega logo appears, a final voiceover, from the children earlier in the ad, urges: 'Senior director Yukawa Hidekazu, STAND UP!'

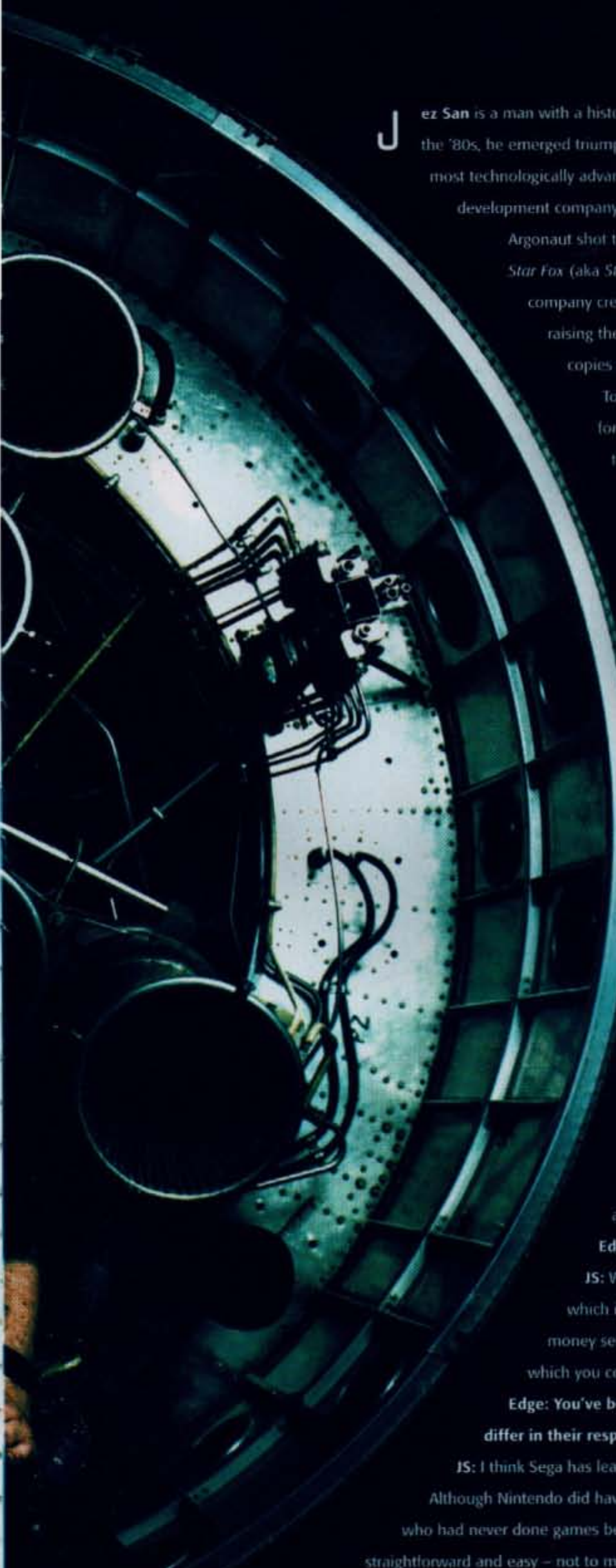
THIS MONTH...
BIG BEAT MANIA
GODZILLA ON VMS
SEGA STANDS TALL



STARMAN

An audience with... Argonaut's Jez Sa

Photography: Nick Wilson



Jez San is a man with a history. After beginning his career as one of the almost-mythical bedroom coders of the '80s, he emerged triumphant with the Amiga classic *Starglider*. Widely acknowledged as one of the most technologically advanced titles of its time, the game paved the way for the foundation of San's own development company, Argonaut Software.

Argonaut shot to international fame after the company collaborated with Nintendo to create *Star Fox* (aka *Star Wing*) for the SNES. Not only was the core project an Argonaut title, but the company created a RISC accelerator chip to power the game's polygon engine. Aside from raising the frame rate above its original one per second, and helping sell four million copies of *Star Fox*, the Super FX (as it became known) opened new doors for the firm. Today ARC (Argonaut Risc Cores) supplies high-performance, low-cost solutions for use in mobile phones and other applications. And Argonaut Software? Under the guidance of San it has blossomed into a powerful development house, with multiple teams and a raft of promising new titles. The company also has a powerful new ally in Sega, and has been signed to produce titles for the Japanese giant's new Dreamcast console. More than a little intrigued, **Edge** couldn't resist knocking on the door of Argonaut's Edgware HQ...

Edge: Dreamcast is obviously the machine on everyone's lips at the moment, and you're very involved with it. How did the relationship with Sega begin?

Jez San: It started with *Croc*, because we did a great job on the Saturn of depicting the advanced graphics that the PlayStation had to offer, and Sega was very impressed with what we had pulled off. They told us that Irimajari [Sega of Japan president] blamed us for the Saturn's failure and said that if *Croc* had come out a year earlier, the console would have done a lot better! It was an amazing compliment and they were very keen for us to do something on the next machine. Meanwhile, we had been working on this advanced project and we decided to let them in on it, and they said, 'We've got to have that,' and so we became the first Dreamcast developer. We kind of skipped a generation, because a lot of developers don't get enough time when they first see a new machine to really take advantage of its features.

Edge: Sega talks about Argonaut as a '1.5-party' developer. What are the implications of that?

JS: I'm not really sure what that means. Maybe it means we are not in-house at Sega but we are doing a game for them.

Edge: Does that mean you are getting the same support as an in-house team?

JS: We're working on a firstparty title effectively so they've provided full support which is very nice. Everyone should do that, every platform company; they make their money selling games, there shouldn't be a profit centre making money from developers – which you could accuse some people of, not mentioning any names...

Edge: You've been close to both Sega and Nintendo now. How do the two companies differ in their respective approaches?

JS: I think Sega has learned that you need to get as many developers on board as early as possible. Although Nintendo did have some brilliant game people in the 'Dream Team', it also had a lot of people who had never done games before and were a bit of a risk. Sega's gone out of its way to make development straightforward and easy – not to mention the fact that the machine is quite powerful and flexible.



Edge: Speaking of making development easier, is Argonaut using Dreamcast's much-vaunted WinCE operating system?

JS: We are intending to, long term, but because we got in there early the system software was still being developed. We had to make a choice – for the first game at least – to 'roll our own' and basically do all the code. Because we're no stranger to 3D graphics, no stranger to taking advantage of new technology, it seemed like the perfect choice to do everything ourselves. In the future we might very well use Direct 3D; we'll test it out when we get it and see if it's any good.

> We had something to prove, because a number of critics at the time said we'd never do it without Nintendo, and we just wanted to show we could

Edge: On your Website you say that every new piece of hardware needs killer apps. Do you see that as Argonaut's role?

JS: We've done that throughout our history all the way back to *Starglider* on the Amiga. We're into technology. We're also into gameplay and into pushing back its boundaries. Some companies like to hang back and wait for a machine to be successful before they develop on it, but we don't tend to go down any dead ends. We didn't do any Jaguar games. You have to make the right bets – but we still like to take risks.

Edge: So do you class Dreamcast as one of those risks?

JS: No. Everything Sega has told us sounds good. The machine spec is good, the plan that we know of is good, everything they have said in the press is the right rhetoric – so fingers crossed! I'm not going to say that I absolutely think it is going to do well, but I think it has every chance. And what's more they are humble about it, they know what they did wrong before and the first thing they say to you is, 'We know that we fucked up, we know the Saturn launch could have gone better, we know the spec could have been better, we know it could have been easier to program.' They understand.

Edge: How has Nintendo reacted to your involvement with Sega?

JS: We are totally independent, we work with everyone – Sony, Sega, Nintendo – nobody owns us. We are mainly privately financed, although we do have venture backing as well. And that gives us the freedom to concentrate on the games and not have any hidden agenda. They are all very important to us, and obviously this year we have done extremely well out of PlayStation. Hopefully next year we will do extremely well out of Nintendo and the year after out of Dreamcast – however it pans out it depends on where the market goes.



THE NINTENDO CONNECTION

Edge: You chose not to go down the Rare route, becoming – more or less – part of Nintendo. Edge heard that Nintendo wasn't overwhelmed by that decision...

JS: It's obviously a touchy subject because there are a lot of personalities and politics involved. We enjoyed our time with Nintendo – we spent two or three years working very closely with the company. The relationship was very good and still is. Miyamoto is still a friend, he still enjoys playing our games, we visit them regularly, they visit us occasionally. I think that the decision to become more independent was just that we were growing. Nintendo traditionally likes smaller partners who will bet their whole company on it. In Rare's case – although Rare is not a small developer – Nintendo owns a large piece of it, so effectively it is a semi-independent outpost of Nintendo. We just wanted to be more independent: we wanted to be able to exploit different technologies and work with different companies.

Edge: Was there also a worry that Nintendo would simply swallow Argonaut whole?

JS: Yes. At the time when we worked with Nintendo, they more or less said they would do as many



games as we wanted to do with them. As much as they were excellent people to work with, we just wanted to be more independent and we achieved that, especially commercially. We did even better with *Croc* than we ever did doing cartridge games. We also had something to prove, because a number of critics at the time we were partnered with Nintendo said we'd never do it without Nintendo, and we just wanted to show we could.

Edge: What were the benefits that came out of the Argonaut-Nintendo relationship?

JS: Firstly it got us into hardware and I am eternally grateful to Nintendo for giving us that opportunity. It also got us into contact with the best games designer in the world. It taught us a lot about character design, using characters properly in a game and not just having them there for the sake of it; using the characters to broaden the appeal of the game and to give it a spin whichever way you want. So many games have characters that serve no purpose. Last Christmas we had the best-selling character game that wasn't *Tomb Raider* – over a million copies so far and still selling, still not in budget, still in the charts after ten months. We are thrilled and are following it up with a whole bunch of character games. We painfully go through the character selection process many times changing the character until it is right.

TESTING ARGONAUT'S CHARACTER

Edge: Would you say that *Vortex* was the last of those old non-character Argonaut games?

JS: *Vortex* was an interesting one. It was a bit of an experiment and it actually played really well, but obviously it didn't sell as well as *Star Fox* –



hardly anything did. That hit the 4 million barrier, it was probably one of the top ten games of all time. But that was at a time when Nintendo had a 95 per cent market share. I don't think many titles can sell 4 million today, no matter how good they are.

Edge: Have you found that it's easier to sell a character-led game?

JS: I think it is. You can't just plop the character in it and get good sales. You have to have gameplay that has presence and depth for an older age group and then put characters in there that will give a younger appeal. I personally think that Rare's Conker is too young a character for the audience. It's a fantastic game, it has fantastic animation – it looks like a cartoon – but I think personally they went a bit too young. They might alienate teenage boys who might think, 'I am not going to be seen dead playing a cute squirrel.' We got away with the cute crocodile, but he had a few moves, and the enemies in the world and the environment kept the appeal broad.

Edge: Western characters have always been seen as second best to those created in Japan. Are there any European game characters you admire?

JS: Oh sure, there's loads. Obviously you have to admire *Tomb Raider* and Lara. There have been female characters before in games, though. We even did a not-too-dissimilar-looking female character in a previous game called *Creature Shock*. We may have been the ones that pioneered those overly ample female proportions! There are a lot of strong characters in fighting games, and I do love most of the Rare characters like Diddy Kong and the others that appear in his world. If you see the games that come out of Japan, those that don't necessarily make it to the West, you will see that most of them are ultra-cute, and we only get a taste of them here. The ones that we do get work quite well universally, but there are so many more that I don't think are that good.



We actually started Croc before any 3D platform game was out, including Mario 64

Edge: Did *Croc*'s underwhelming reception by certain sections of the games press affect your strategy towards making character-based games?

JS: Luckily, the gameplayers who spent their money liked it, regardless of what the critics said. Some critics really liked it, and some critics didn't. It wasn't a perfect game, there were lots of things that we could have done better, but we think we hit the PlayStation market at the right time with a game that people wanted. We actually started it a long time before any 3D platform game was out, including *Mario 64*. We even showed the early version of *Croc* to Nintendo, about two years before *Mario 64* came out. The critics may have accused us of ripping off someone else, but we know we were there first.

TECHNOLOGY THE ENABLER

Edge: Your older games were far more technology led. Is that a facet you would consider pushing again?

JS: Technology is an enabler of gameplay. We may have been guilty of that ten years ago, of doing games that were just technology demos. But ten years ago you could sell a game because it had filled polygons, which seems stupid now. Today we do continual technology development and we still try to be 'state of the art', but gameplay is the ultimate, and all of the technology is just there to let us create better games.



Edge: One of Argonaut's most interesting development fronts seems to be its experimentation with realtime physics.

JS: The games designer, he can just see the creative possibility this technology brings. The whole point is it's for gameplay, it's not for technology's sake. Yes, someone may drive around or play with all the blocks and the swinging machinery and things like that and think this is a cool technology demo, but that's not how we're going to use it. We're going to liberate the freedom of the game designer to create something different and more interesting, more intuitive even.

Edge: Argonaut seemed close to leading the 3D pack with its BRender programming library. Where's that technology at now?

JS: Of our own games, *Croc* used BRender, *Kanaan* (see p36) uses BRender – it's become the core of many games in-house. But unfortunately when you compete against the might of Microsoft you can't win, even if you have a technically superior product. Some of the things it's adding to DirectX 6.0, we had in '94. We're grateful we did BRender, but commercially it wasn't the success that we hoped. We didn't lose money but all those geniuses could have been put on games instead of

technology and could have developed far more for the company. That's where they are now – the entire BRender group is now on various games in the building.

Edge: Was it frustrating watching Microsoft become involved?

JS: It was, because in the early days of 3D libraries, there were only three companies: us, Rendermorphics and Criterion, and we were all pretty much competitive in different ways. Then Microsoft set the cat among the pigeons by buying one of us. It could have been any of us, but Rendermorphics was the smallest and the easiest to buy. That became the basis for Direct 3D. If Microsoft hadn't upset the balance there would have been healthy competition, and there would have been incredible improvements in 3D technology. We would have seen huge leaps, we would have had curve rendering a lot earlier that we did, all these cool techniques. Microsoft choosing one and making it a standard basically discouraged the other two from continuing.

Edge: Are there still areas where technology can be easily and efficiently shared through the company?

JS: Now that ARC is going into cellphones and hard disk controllers and things like that, there is less cross-pollination, purely because we are still focused on games and they are focused on microprocessors. Of course, if someone comes to us to, say, design a videogames machine, we will know how to do it. But there's not much common ground between games and hard disk, so we will divert. That's the right way, that's the way to grow both businesses properly.

A HARDWARE HABIT TO BREAK

Edge: Argonaut's old partner Nintendo is thought to be looking for a hardware supplier...

JS: As far as we know they've made their choice. We don't know who it is, but to the best of our knowledge it seems to be a lot of ex-Nintendo 64 designers who Nintendo have helped to finance as a separate entity. We're not working on the next Nintendo machine.

Edge: Were you ever in the running to design a Nintendo console?

JS: I think at one point we were, but we had to make a crucial decision of whether to go for the big wide world of microprocessors or stay in the niche world of 3D games machines. And if you look at the world market for microprocessors, 97 per cent of it is general stuff and only a tiny percentage of it is videogames machines. I love getting involved in the platform design and I personally would have loved that, but it might not have been the right direction for the hardware group.

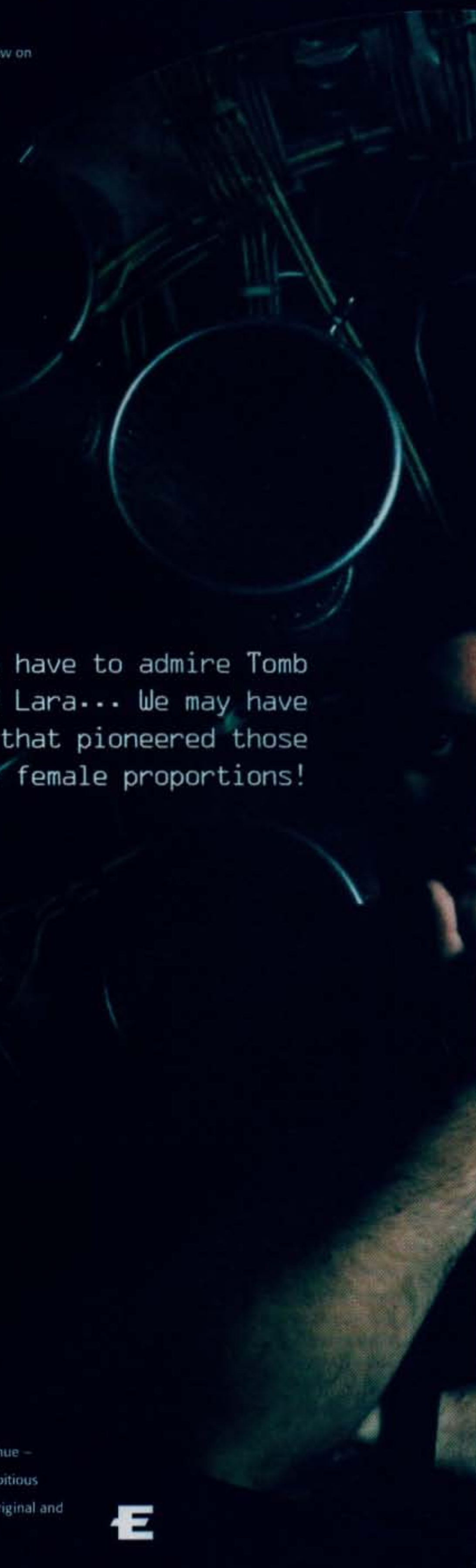
Edge: Argonaut is clearly a pretty diverse operation. Do you find the time to pay attention to game development as much as you'd like?

JS: Keith Robinson runs the game studio. I spend time wandering around and chatting to people, maybe giving some ideas, and maybe getting in the way – I kind of stick my oar in, and sometimes I start new projects. I'm very lucky. If I had to manage things I would make a right mess of it. But I'm not in a day-to-day role, I am more in a seeing-what-might-be-fun-in-the-future kind of role, and I really enjoy that. Keith is a brilliant games designer and has also programmed games. A lot of us are ex-programmers, I think that works very well.

Edge: What about the overall picture? Where do you think Argonaut fits into the grand scheme of things these days?

JS: Well, it's a happy big wide world of developers out there, there are a lot of good ones. I'm friends with some of them, some of them I know by reputation. I think, as you can see by the size of the place, that we are getting up there in terms of capacity and resources. We're certainly not the largest but also definitely not the smallest. We have our speciality area – we are focusing mainly on character games. Commercially we've done well that way and we intend to continue – we are not going to compete head on with fighting games any more, although we have done in the past [with the overly ambitious *FX Fighter*]. We are not going to compete head on with driving simulations, or *Mario Kart* games. We're going to try and be original and do the best games we can, and hope we enjoy as much success in the future as we have done recently. ■

> Obviously you have to admire Tomb Raider and Lara... We may have been the ones that pioneered those overly ample female proportions!



PRESCREEN

A roll call of the newest arrivals in the world of videogaming

EMPTY GESTURES

Discussing the merits of quantity over quality

To rank among the game design elite these days requires a steady commitment to being 'diverse'. No longer is it enough to be the most complete or the most polished. Every designer is looking for something new – that 'unique selling point' destined to catapult their game into the hearts and minds of press and public alike. Perhaps it's understandable that so many settle for creating yet another driving title, given the standard set by the industry's top minds.

Equally, however, the weight of pressure from publishers to release a 'product' cannot be underestimated. Certain companies have product overlords, empowered by their bosses to ensure that only acceptable titles (ie those that are 3D – to hell with the content) are worked on by development teams. These middle-management non-gamers are a curse on the videogames industry, driving forward substandard titles on the strength of a good 3D engine. Clearly, the PlayStation market is affected worst by this malaise, if only because it is relatively inexpensive to duplicate CDs compared to having N64 cartridges made.

At first it seems puzzling that anyone would want to make a bad videogame – after all, everyone knows that the best titles achieve the best sales. Where the hardcore gamers need to make a mental leap to, is understanding that for the aforementioned managers this industry is all about numbers. Why spend, say, £1 million making a great game, when £250,000 could be spent making an average one? These people aren't creatives, they're accountants with no interest in developing innovative, genre-busting products.

Perusing the heavily stocked shelves of videogame stores is often a depressing business, with few titles really crying out to be purchased. One of the often-considered factors used when **Edge** is reviewing a new game is whether it would merit personal expenditure. Too often the answer is a resounding, 'No'. Those who select which titles are going to be developed don't seem able to ask themselves that simple question, nor whether they would want to own several copies of essentially the same game. Psygnosis' *Colony Wars*, *Blast Radius* and *Colony Wars: Vengeance* are perhaps the most recent example of this trend, as three uncomfortably similar titles from the same company being passed off as standalone products. It wouldn't be so bad if the punters didn't buy the damn things...





Edge presents the first in a new regular column: Spot the Difference. From left to right: *Colony Wars*, *Colony Wars: Vengeance* and *Blast Radius*. Or was that the other way around? Who knows...

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Edge's most wanted

The latest games on **Edge**'s wish list



TOCA 2

(PS) Codemasters

Codemasters is hoping to continue its impressive attack on the videogame racing world with this substantially improved sequel to last year's hit.



Kanaan

(PC) Argonaut

Unreal may have hinted at the possibilities of playing *Quake II* in the great outdoors, but *Kanaan* looks set to fully realise the dream.



Jet Force Gemini

(N64) Rareware

Disposing of insectoid aliens as Lupus the dog is an intriguing proposition. **Edge** expects Rare to surprise players again by releasing this soon(ish).



C&C 2: Tiberian Sun

(PC) Westwood

After a lacklustre *Starcraft*, it's left to Westwood to bring Cavedog down a peg. Expect a proper sequel, rather than a *Red Alert* style cash-in.



Turok 2

(N64) Acclaim

If it weren't for Acclaim, Nintendo's 'Dream Team' would have been the butt of endless jokes. Can the makers of *Turok* and *Forsaken* deliver again?

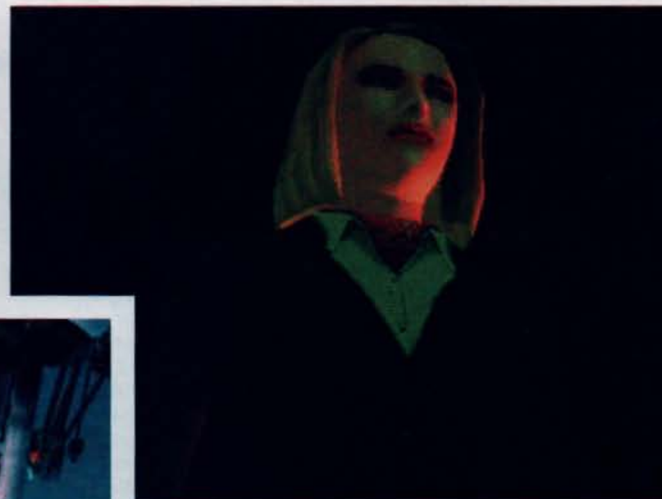
PRESCREEN ALPHAS

DREAMCAST'S FIRST-BORN LEADS THIS MONTH'S SELECTION OF THE FRESHEST AND FINEST

D2

FORMAT: **DREAMCAST** DEVELOPER: **WARP**













With more than 2,000 polygons making up the heroine Laura's face, *D2* on Dreamcast is already raising eyebrows. After surviving a plane crash above the wilds of Canada, Laura wakes in a desolate hut, only to come under attack from a variety of mutants. To protect her, she wields weapons including a shotgun and a flame-thrower. Her hit points vary according to the temperature, so it's best to stay close to the hut rather than exploring the distant – yet fully visible – mountains in particularly inclement weather. For such long distance journeys, players can drive vehicles including a snow mobile. Despite the multi-polygonal snowstorms, Laura's skirt fails to lengthen – although the weather does alter the lighting effects.

GP LEGENDS

FORMAT: **PC** DEVELOPER: **PAPYRUS**







Nearing its postponed release date, Papyrus' classic Formula One simulator continues to impress. The prospect of racing the full Nürburgring circuit in Jim Clark's 1967 Lotus has rarely been more appealing. Barring a last-minute disaster, everything looks on course for success.

TOCA 2

FORMAT: **PLAYSTATION** DEVELOPER: **CODEMASTERS**










After last month's excellent *Colin McRae Rally*, Codemasters returns with a sequel to what is still one of the PlayStation's best racing titles. There's much more to *TOCA 2* than graphical revamps such as the proposed hi-res mode and improved car models. The developer is keen to improve all areas, including new AI routines. Most promising is its linkup compatibility and the prospect of racing other vehicles at touring car weekends.

GP500

After years of little action, the bike racing genre has suddenly seen a revival. This latest PC effort allows players to compete on the world's motorbike circuits and all of the different classes that make up the various categories. At this stage, the handling is promising and visually *GP500* is not far behind its competitors.




◀ SEGA RALLY 2

Taking a detour past the Saturn, *Sega Rally 2* will arrive in the home via the PC, with highly customisable cars making up for the lack of Model 3 engine power. Players will be able to alter parameters such as gear ratio, handling and suspension, and can take their cars through a ten-year mode. There will be six different cars (plus secret cars) and over 40 stages.





DRAGON QUEST VII

FORMAT: **PLAYSTATION** DEVELOPER: **ENIX**







First slated for the N64, the PlayStation's storage once again proved irresistible. The three men responsible for the *Dragon's Quests* – Jorii Yuji (design), Toriyama Akira (Manga) and Sugiyama Koichi (music) – are legends in Japanese role-playing. Prior to *Final Fantasy VII*, *Dragon Quest* was the biggest thing in RPGs, still outpacing Square's series in total sales.





ALIEN RESURRECTION

FORMAT: **PLAYSTATION** DEVELOPER: **ARGONAUT**









Games based around the 'Alien' movie license have always shown glimpses of greatness, but never matched the intensity of the original films (well okay, the first two). However, publisher Fox Interactive has given Argonaut full access to every piece of footage, every facet of *Resurrection*'s script in order to create – hopefully – the best interpretation of the brand yet seen. The game itself boasts a powerful 3D engine and numerous sprawling levels.







B-MOVIE

FORMAT: **PLAYSTATION** DEVELOPER: **KING OF THE JUNGLE**







London outfit King of the Jungle has come up trumps with this 60fps arcade-style shooter, featuring a classic 'rout the alien invaders' plot. Once enemy ships have been shot down, a variety of resources can be collected and used to make new weapons. Expect a late-October debut through GTI.

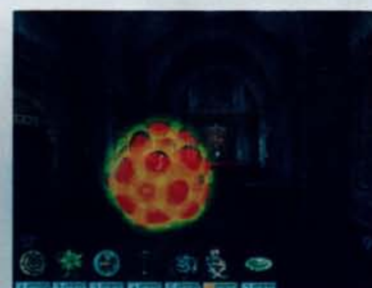
GEX 64

The Nintendo version of Crystal Dynamics' above-average PlayStation platformer is nearly complete. Set for release mid-September, *Gex 64* features the same slick graphics engine and the equally smooth vocal talents of British actor Leslie Phillips. While unlikely to challenge *Banjo* or *Mario* for first and second place, *Gex* will be a welcome addition to the party.




WHEEL OF TIME

FORMAT: **PC** DEVELOPER: **LEGEND ENTERTAINMENT**





With the delicious *Unreal* still lighting up the PC gaming firmament, Legend has joined Ion Storm and Microprose in licensing the 3D engine. *The Wheel of Time*, like Origin's *Ultima Ascension*, aims to combine the clean gameplay of games like *Quake* with the depth of an RPG (albeit from the opposite direction). Based on Robert Jordan's fantasy novel series 'Wheel of Time', players select one of four characters who all control powerful groups in Jordan's mythos. The game will be a prequel to Jordan's novels, giving Legend the freedom to create its own plot.

◀ STEAM

Still very early, Newcastle-based Reflections' alternate reality, *Resident Evil*-ish thirdperson adventure promises to engross players within its strong plot and massive 3D environments. What starts off as a small task quickly develops into an epic quest requiring individuals to traverse dynamic environments, interacting with their many inhabitants for information.







ULTIMA ASCENSION

FORMAT: **PC** DEVELOPER: **ORIGIN**







Despite reaching its ninth installment, Origin claims the *Ultima* series is far from running out of steam. 'We liked some of the things that our competitors were doing with more action-oriented roleplaying, but we felt that they were not taking it to the extreme,' says creator **Richard Garriott**. 'We want to take roleplaying to the edge – and then jump over.'





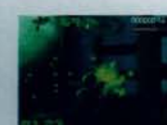
BUCK BUMBLE

FORMAT: **NINTENDO 64** DEVELOPER: **ARGONAUT**

Take one of the *Star Fox* team, send him to work with Miyamoto for a couple of years, receive him back into the company, and this is the result. *Buck Bumble* is a mission-based, 360 degree shoot 'em, following the exploits of the eponymous Buck. *Bumble* has come a long way since **Edge** last viewed it, featuring several weapons, gigantic foes, and detailed levels.











BLOODY ROAR 2

FORMAT: **ARCADE/PLAYSTATION** DEVELOPER: **HUDSONSOFT**





Like the original, *Bloody Roar 2* features fighters who can metamorphose into beasts. But this time the differences between human combatants and their animal form will be far more pronounced – beasts are much more violent and aggressive, and offer a range of special attacks. Three of the original characters remain; Yugo (the wolf), Alice (the rabbit) and Long (the tiger). Debuting in the arcade, a PlayStation version will follow shortly after.

SENGOKU TURB

FORMAT: **DREAMCAST** DEVELOPER: **NEC HOME ENTERTAINMENT**







An Dreamcast action RPG, players assume the role of Jino-chan, a space girl crash-landed on a world of cats, who believes she is the Messiah. The engine incorporates what the developers call a 'Movie Generator', which uses the power of Sega's console to create cut-scenes on the fly.

SLAVE ZERO

FORMAT: **PC** DEVELOPER: **ACCOLADE**








Somewhat reminiscent of Sega's *Virtual On*, Accolade's *Slave Zero* focuses on mechanoids fighting in 3D cities. Rather than the lumbering robots of PC games like *Mech Warrior*, the inspiration comes from anime. Players will battle through six different cities, climbing buildings on the way and tip-toeing over – or on top of – the tiny citizens. Graphically ambitious, *Slave Zero*'s designers have developed a 3D engine that is particularly adept at hidden polygon removal. The 1999 release date gives gamers time to purchase sufficiently powerful hardware.

KANAAN

Argonaut might not be the first to go back to the future with a firstperson shoot 'em up, but this exlusive look at *Kanaan* suggests that its bark will be as good as its bite







By allowing the player to capture enemy vehicles, from jeeps to bombers, Argonaut has opened up an array of gameplay and combat opportunities



***Turok* and *Incoming* step aside – there's a new blast master in town. *Kanaan* features some spectacular effects, guaranteed to catch the eye**

Format: **PC**

Publisher: **UbiSoft**

Developer: **Argonaut**

Release: **Winter**

Origin: **UK**

Think firstperson PC shoot 'em ups. Think dark tunnels, think robot enemies, think bleak future worlds. The stereotype defined by id's seminal *Doom* has been adhered to with a near-religious reverence by developers worldwide. So perhaps it's salient that Argonaut, a traditional console game company once strongly linked to Nintendo, should be chipping away at the genre's mould.

Argonaut's firstperson foray is currently dubbed *Kanaan*, although the search for a name to replace the development tag of 'Chaos' has been a protracted wrangle. While the game's futuristic setting is nothing new, its 'dog'-themed alien enemies are refreshingly different. Guiding lone human Gabriel Cain, the player must stop the invaders from capturing his home planet of Camrose. Cain is one of two surviving members of Camrose's crack Chaos Squad, the other being the group's traitorous captain deSoto. As the game progresses, new plot elements are introduced, including Cain joining the underground resistance. New weapons, locations and environments will gradually be uncovered as Cain struggles to defeat the alien foe. His eventual target is the alien leader Commander Kray, who must be brought down for Cain's final victory.

Through the careful use of tessellation techniques, *Kanaan* has been gifted with vast





Along with copious blood splatterings, tall pointy rocks are a prominent feature in Argonaut's *Kanaan*



As in *GoldenEye*, specific parts of enemies can be targeted. There's a bit more ketchup, though



The dirty-dog alien scum must be eradicated, and Gabriel Cain has the weaponry to do it. The final game will feature over a dozen armaments

environments. One of the development community's hot technologies at the moment, tessellation reduces the number of polygons required to create a 3D object the further away it is from the camera. Shiny Entertainment's forthcoming *Messiah* has already been widely reported on for its use of the technology. But while *Messiah*'s characters are the main beneficiary of tessellation, Argonaut has used it to enable the drawing of huge landscapes. However, the game also contains a large number of structures which can be entered, the action blending smoothly from interior to exterior. Utilising *Kanaan*'s powerful 3D engine fully, certain buildings will feature balconies, giving the player the ability to look across an area and attack enemies from a distance. Other graphical effects, such as explosions, are more than up to current industry standards, while the hand-animated characters move in a highly believable fashion.

In order to move swiftly around these incredibly open areas, the player can capture and utilise a variety of vehicles. These include jeeps, cars, trucks, speedboats, helicopters and bombers, each with their own armoury available at Cain's disposal. **Edge** sampled the delight of racing across the desert level in a jeep, gunning down and running over the canine invaders at every turn. Notably, the handling model for the vehicles is on a par with many PC driving titles, which bodes well for the other modes of transport yet to be included. Jumping out of the various transport types with a single key press allows the player to stop, attack and move on smoothly.

While *Kanaan*'s standard viewpoint is firstperson, Argonaut has strong opinions regarding character depiction, and to that end an additional thirdperson camera is selectable. For the in-vehicle sections of the game, it's probably preferable, giving a better impression of controlling a car rather than just running very quickly. Both Cain and his dog-eared enemies are well designed, and players may well prefer to see the hero in action, as in *Tomb Raider*. Cain also has access to a sniper weapon (as seen in *GoldenEye*), so he can pick-off foes from a great distance by zooming in through the weapon's sights. Traditional firstperson puzzle elements also emerge, along with console systems which reveal conundrums that block progress.

With the gameplay currently being tweaked, and Argonaut having chosen to team up with publisher UbiSoft, *Kanaan* clearly has the potential to succeed. All the expected bases have been covered, while factors like the controllable vehicles offer more than enough to capture PC gamers' interest. And possibly that of Dreamcast owners, too…




Picky players will be able to select this optional thirdperson (left) view if so desired





***Kanaan*'s open worlds are a welcome change after the recent claustrophobia of firstperson PC titles**

FINAL FANTASY VIII

Nature abhors a vacuum. As the furore surrounding *Final Fantasy VII* finally dissipates (following its triumphant conversion to the PC), *Final Fantasy VIII* details have rushed in to fill its place





The FMV shows *FFVIII*'s heroes as SquareSoft may always have liked to see them portrayed. Of course, ingame the realism diminishes somewhat, posing the question: is lifelike really the best option?

Happily, the recent Japanese release of Square's swish action adventure *Brave Fencer Musashiden* was accompanied by a second disc containing, among other delights, a surprisingly extensive playable demo of the eagerly awaited *Final Fantasy VIII*. Much of the shadowy information concerning the game has now condensed into fact or else been dissipated in the light of the sampler.

As reported in **E**60, the super-deformed character style of the series to date has been ditched in favour of a more universally appealing and realistic graphical style. A clear response to the success of Square's Japanese-style RPGs in the world at large, *FFVIII*'s characters are more reminiscent of a PC title like *Blade Runner* than its true *FF* heritage.

Environment graphics remain less altered, however. Musically, too, the demo suggests little change from *FVII* – indeed, with some sections of the score largely unchanged it's likely that Square hasn't really tackled the aural aspect of its latest RPG yet.

It's in the battle sections that the new graphics – and gameplay variations – of *FFVIII* become most apparent. The basic battle system remains the same: pseudo turn-based, with players selecting attacks while the fight rages around them. Interestingly, prior to fighting, there seem to be less random battles – another concession to western tastes.

There also appears to be less use of cutaway sequences, with more actions displayed in the battle view.

More moves happen simultaneously, too – one character might heal another while a third launches an attack, for example.

Limit breaks of a kind remain, although there's no bar to indicate how close characters



Visually, *Final Fantasy VIII* is like a cross between the previous game and thirdperson PC adventures such as *Dark Earth* and *Blade Runner*







***FFVIII* will be huge – the demo alone features six substantial characters. The designers have hinted that the central theme is love, perhaps in an effort to attract female gamers**

Format: **PlayStation**

Publisher: **SquareSoft**

Developer: **In-house**

Release: **Autumn (Japan)**

Origin: **Japan**






As in *FFVII*, the difference between the exploration screens (above) and the battles (top right) is stark. Note Squall's limit break attack (centre right)

are to breaking point. Weapons include the hero Squall's gunblade (which can be used both to slash and to fire bullets), as well as catapults and more conventional swords.

Contrary to early reports, magic and spell casting remain. Materia (the substance that could be placed on weapons or bracelets to confer magical abilities) has been replaced by the 'Draw' ability. This enables characters to try to suck magical energy out of their opponents.

As well as lightning bolts and heal spells, the demo contains a single Summon spell, Leviathan, which is as impressive as anything in *FFVII*. When cast, a huge snakelike ice dragon appears, raises a volcanic mountain from the earth, coils to the top, and produces a cascade of water powerful enough to wash away all but the hardiest opponents in the demo taster.

FFVIII's plot involves a military school called the Garden, where lead character Squall is training as an operative for the elite SeeD squad. In character terms, reports claim that, as well as Squall, players will also be able to assume the role of Laguna Loire, a garrulous 27-year-old ex-Garden member.

With the characters looking more realistic, *FFVIII* seems even more like a drama than a game. Still, countless PC games have boasted more realistic characters than *FFVII*, yet none can boast the emotional attachment that Square's title engendered. If Square wants to move its protagonists away from the heavily stylised look of Japanese game heroes like Cloud, Mario, and even Pac-Man, it may need to change the game elsewhere too (the demo indicates that Square is continuing its experimentation with cinematic devices).

With well over 100 hours of gameplay and a plot likely to incorporate dozens of characters, *Final Fantasy VIII* could well move the series into a place neither game nor film, but very much Square's own.



The party hides from a group of guards during a realtime cut-scene. Other sections utilise similarly effective blends between action and cutaways



The Leviathan Summon spell shown in this sequence is absolutely gorgeous, if drawn-out. Dual-shock support means players can feel the surging water as it washes over enemies

COMMAND & CONQUER 2: TIBERIAN SUN

Fresh from the *C&C* fold and destined to follow its forbears to a chart-topping status, the PC's most eagerly anticipated game is almost here





Realtime strategy game explosions are not known for their spectacular nature, but *Tiberian Sun*'s dynamic lighting can cast some lovely shadows across the voxel landscapes

The past year has seen the PC's High Street presence slip yet further behind the PlayStation. It is in some ways therefore ironic that the usual visual advantage provided by PC 3D cards will play no part in the inevitable success of *C&C: Tiberian Sun*. The third game in the four-million-plus-selling *C&C* franchise is bucking the polygonal trend, employing enigmatic voxels instead.

'We have certain criteria we must fulfil in *Tiberian Sun* and the first of these is speed,' explains *Tiberian Sun*'s producer **Erik Yeo**. 'Voxels allow us to display hundreds of units on the map simultaneously because once one is rendered into RAM, redrawing it onscreen is virtually instantaneous. Polygons must be constantly recalculated every time they move and that's CPU intensive'

This commitment to speedy technology has kept Westwood in the top tier of PC developers. *Tiberian Sun*'s engine adds a 3D isometric view to the series for the first time, and the 16bit colour throughout augments this, although the team is devoting most of its programming resources to unit and level design.

'We believe a smaller number of well-designed and thought-out units is the right way to go,' says **Brett Sperry**, president of Westwood (and allegedly the finest *Red Alert* player in the world). 'We've found that players don't really want a huge number of different units to figure out and the key to making this philosophy work is to ensure that every unit has a specific counter – an Achilles heel.'

The third *C&C* game, *Tiberian Sun* is set in the year 2020. This allows an entirely new suite of units to be developed for the still-battling GDI and NOD factions, who have now respectively retreated to the Arctic Zone and underground to escape the earth's Tiberium ore-devastated equatorial zone. These disparate lives allows Westwood to fulfil its promise of making the two sides completely different, as helicopter harvesters, tunnelling tanks, firestorm defences and hovercraft vie for control of the sparse resources. It also allows them to create two types of ore instead of the previously seen one, and this should allow further strategic depth.

Westwood is also devoted to ensuring the singleplayer game is as involving as the multiplayer experience (which will be fully supported over Westwood's admirably free Internet gaming site, www.westwood.com).



***C&C*'s Tiberium ore has mutated into two varieties. Mobile flying harvesters will add a new challenge to defending ore fields while the ore itself will continue to damage units**



Despite omitting several features already seen in *Total Annihilation*, spectacular action scenes like this should ensure that *Tiberian Sun* will not be graphically challenged

Format: **PC**

Publisher: **Virgin**

Developer: **Westwood Studios**

Release: **November**

Origin: **US**









Westwood invented the RTS interface (right) and is understandably reluctant to radically alter it. It will be tweaked to become more intuitive for beginners



Walls will play a vital part in *Tiberian Sun*, but for the first time they will allow your forces to pass through while keeping the enemy at bay

The singleplayer missions – the one area where Westwood is years ahead of the competition – are being designed to retain their superb blend of action and novel tactics. Again the technology will help, with the coloured lighting making base assaults easier at night for certain units, and fully deformable terrain offering huge possibilities. Lakes and rivers may freeze over with the passage of time, landslides may block off roads, and bridges can be taken early on only to discover that by doing so a valuable supply line has been inhibited for the end game.

The key to integrating all these elements is the artificial intelligence, and Westwood is bullish here, too. Yeo again: 'We believe that over the last couple of years the term AI has been somewhat abused. In *Tiberian Sun* we are committed to taking AI a genuine step forward and we've given the whole subject a massive amount of thought. I don't want to say too much but it will be an adaptive system, able to learn on the fly and heuristically create new solutions to new attacks.' If this fulfils **Edge**'s obviously lofty expectations, expect attacks from multiple directions, combined air and land attacks (Westwood is not planning to include many sea units after the initial failure to implement *Red Alert*'s fairly) and novel ways to defend and counterattack. Given that the company has led the way for some time in this area, only a brave man would bet against some meaningful success.

Westwood knows its twin pillars of *C&C* success – making a fast game and ensuring it is accessible to 'non-gamers'. With this in mind it is not including 3D line of sight, as seen in arch-rival *Total Annihilation*, and is resisting the urge to move into true 3D. What forward steps it *is* taking can only be applauded. At least one PC game this Christmas has a chance of withstanding the onslaught from *Metal Gear Solid* and its PlayStation colleagues.





In the finished version all the scenery will be fully deformable. Destroying bridges might provide a short-term advantage, but could impede vital counter-attacks later in the game

SILENT HILL

As the average age of videogamers continues to rise, publishers are becoming more aware of the subject matter that appeals to adults. And the rise and rise of the horror game is being led by Konami







After being coaxed through this fog-heavy level by an encounter with what appears to be an apparition, the player encounters a message of warning...



...which appears to be redundant, as the mutt in question has been ravaged by something altogether more ferocious. But what, exactly?

Format: **PlayStation**
Publisher: **Konami**
Developer: **In-house**
Release: **Spring**
Origin: **Japan**

There's no doubt that, working out of their college labs in mid-'70s America, the designers of the very first videogames had no idea that 20 years later, developers would be using electronic entertainment platforms to deliver altogether more unnerving experiences than the wholesomely simplistic games of deep-space warfare and 'tennis' that kicked off a revolution.

Videogame content has certainly shifted a long way since its humble beginnings. Developers experimented with digitised imagery to realise more adult themes in the '80s (notably British outfit CRL with adventure games such as *Dracula*) and now, using today's technology, an 18-rated title such as *Resident Evil 2* can be an instant bestseller.

Following in the footsteps of such lucrative footsteps is *Silent Hill*, the most inspired title among Konami's surprise offerings at this year's E3 event. To call it a clone would be to do it a severe injustice, though: *Silent Hill*'s environments are presented in realtime 3D, and the atmosphere it generates, even in the early version **Edge** has seen, far exceeds that of Capcom's legendary horror adventures.

The game sees players picking up the role







The action kicks off following a car accident (above). Exploration is the keyword from here





A handgun comes in handy in dealing with these genuinely odd adversaries (left). Great lighting abounds (above)

of a car-accident victim who loses his daughter – literally – following the incident. Heading towards Silent Hill, a small, sleepy town whose occupants have mysteriously vanished, the gameplay unfolds and reveals itself to be a blend of the *Resident Evil* and *Tomb Raider* series.

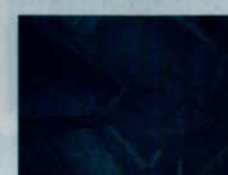
Armed with a map of the area, players set out to explore a town shrouded by a thick fog – a feature adopted, presumably, to build atmosphere while relieving pressure from the game's 3D engine. Exploration in this early build of the game reveals a variety of shops and buildings – none of which can be entered, a factor that could change in the finished game. It's not long before another character is encountered – a young girl, possibly the lead character's daughter. Represented in a cutaway CGI sequence, she implores the player forward, at which point she seems to disappear. Further progress involves negotiating a series of dimly lit passageways which require the use of a torch – bringing some fabulous lighting effects into play. It's then that the truly sinister feel of *Silent Hill* surfaces, the grim colour scheme enlivened by areas decorated with buckets of gore. Rounding a corner, the game's soundtrack begins to complement the visuals, and churning, wheezing tones issue forth before the player is assaulted by what appear to be zombie-esque children. On this admittedly limited evidence, it looks as though *Silent Hill* could be the most genuinely chilling videogame ever realised.

Beyond the gameplay itself, which at this point appears sound, the cut scenes deserve a special mention. Unlike other big-name Japanese softcos such as Namco and Square, Konami does not have a reputation for producing cutting-edge CGI, and yet the quality of the sequences in *Silent Hill* are nothing short of mind-boggling.

The *Resident Evil* theme is ready to go real time, and *Silent Hill* is poised to explore those avenues with aplomb.











External levels are shrouded in mist. Jarring camera angles serve to heighten the already-considerable tension in the game





The interior sections can prove especially reminiscent of a certain Capcom game series. In real time, though…

SEVENTH CROSS

Edge's first Dreamcast Prescreen reveals an intelligent game focusing on artificial life. *Seventh Cross* couldn't be less like the arcade titles that typified the Saturn's early software catalogue









Seventh Cross sees NEC HE facing the new horizons opened up by Dreamcast. Yet rather than create an obvious arcade polygon fest, it's working with A-life





Appearance depends on DNA. The earthy beast above looks very different to the golden metallic humanoid (top)

Format: **Dreamcast**
Publisher: **NEC HE**
Developer: **In-house**
Release: **November**
Origin: **Japan**

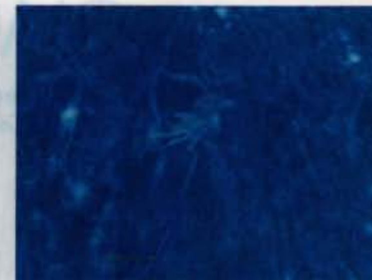
With less than half a dozen titles announced so far for Sega's all-or-nothing games console, *Seventh Cross* seems an oddity. An A-life game in which players experiment with DNA to evolve the ultimate predator, it's far removed from the arcade conversions which might have previously been expected to sell the console.

As befits its quirky nature, *Seventh Cross*' closest relative is probably PC title *Creatures*, while it's clearly also inspired by Bandai's Tamagotchi and Nintendo's *Pocket Monsters*.

Players begin by designing a baby humanoid fighter, whose attributes alter over the course of the game. Rather than toying with pipettes and test tubes, players specify their character's DNA with colours. The genetic makeup is portrayed via a ten-by-ten

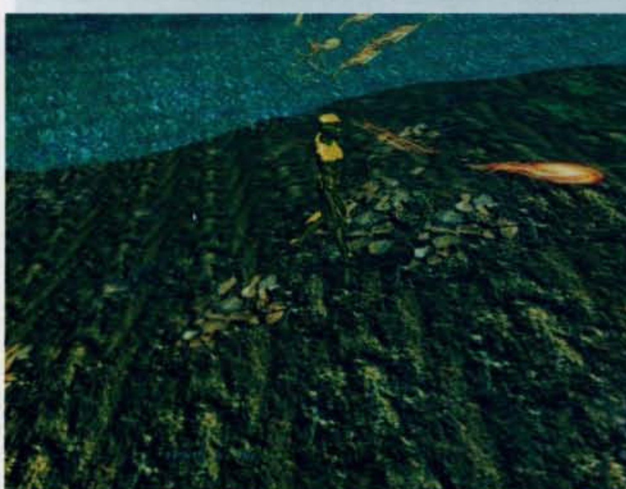








A fish roams the game's depths (above). Perhaps the aquatic denizens might be hunted... Certainly, some creatures seem perfectly adept in the water (top)



***Seventh Cross* currently places heavy emphasis on textures (above), a feature that may change with further development. Note the flames**

coloured matrix (called the Self Organisation Map) with colours representing attributes like speed, intelligence or strength. Once designed, the baby creature is born into the 3D world.

At first, the infant predator is happy scavenging for vegetables but as it grows, its tastes change. Only animals can provide the nutrition it requires once it reaches adulthood, which means it will need to fight to survive.

To hunt for prey, the creatures employ a variety of different attack methods, depending on their DNA. Once they've killed their opponent, they eat it. Unsurprisingly, the food changes the creature's chemical makeup. In a break with reality, digested food also alters a creature's DNA, and therefore its abilities. This suggests a creature that eats mainly slow-moving herbivores will become adept at overpowering them, whereas a diet of fleet-footed critters will probably produce a speedier predator. NEC HE says the various combinations of DNA and subsequent behaviour (the classic 'Nature and Nurture' double-whammy) can result in some 810,000 different types of creatures.

With the developer's parent company NEC behind the VideoLogic PowerVR technology at the heart of Dreamcast, it's no surprise to find that *Seventh Cross* boasts some stunning effects. (NEC HE has now abandoned its projects for the PC FX – Japan's most recent lacklustre games console – to concentrate on Dreamcast). The game still needs to go through several evolutions before it'll befit a Dreamcast game, but some of the console's power is apparent.

NEC HE hasn't talked about the VMS in *Seventh Cross*, but it's likely players will be able to transfer their creatures to another user's machine to fight. Internet bouts are also expected. An intriguing start to the brave new world of Dreamcast.







Gorgeous transparent water is reminiscent of PC titles like *Unreal*. Indeed, the game looks more like a PC game than a console title

GIANTS

***MDK* – which Planet Moon created while still part of Shiny – has been termed an 'Art House game'. Its *Giants* might be described as an Art House game by George Lucas and David Lynch**







Herds of animals roam the islands. They can provide Smarties with a feast, or even operate machinery. At sea, schools of fish can be found

'Kabuto is basically a thinking man's giant,' says Williams. 'He trusts no one, and guards the only thing that has been constant for him – the island, his home'

Format: **PC**

Publisher: **Interplay**

Developer: **Planet Moon**

Release: **Spring**

Origin: **US**

'Maybe movies inspire us,' says **Nick Bruty**, co-director of art and design at Planet Moon. 'I always liked the old "King Kong" movie, where Kong's fighting those jets and helicopters atop the Empire State building. Hence Kabuto the Giant and the flying Meccs.'

Besides struggling to pinpoint influences, Nick Bruty and his colleague **Tim Williams** seem unable to sum up *Giants* succinctly. Consider the plot. Five vacationing Cockney space aliens (the Meccaryns) leave their home planet Majorca, only to be swallowed by a giant fish and discharged into the ocean near an island belonging to the magical Sea Reapers. Considering the Meccaryns a threat, the Reapers summon a giant, Kabuto, who decimates half of their number.

The stage is set for what boils down to a tremendously inventive shoot 'em up. Players select one of the three aforementioned factions then fight across 30 different islands. 'On the islands you'll find shepherd-like guardians roaming around looking after herds of creatures for Kabuto,' says Williams. There are also various bases dotted around. Inside the player's own base is a power source that must be protected. Equally, opponents' bases must be raided to complete the level. 'Basically, the Sea Reapers want their island back, the Meccs want to collect enough energy and resources to get back to Majorca, and Kabuto just wants everyone off his land.'

Giants is unashamedly a shooter, but it



If the Sea Reaper (above) spots Kabuto on one side of the island, she might whip round to the other side and steal some of his supplies



The number of Smartie minions a player has in his work force is shown in the top right of the screen (above). In an excellent twist, they can even build pubs

boasts extra levels of complexity. 'Both RPGs and strategy add spice to it,' says Williams. 'If you play the Meccaryns you'll first rescue four teammates, then later you'll set up a base and capture creatures to work for you.'

These creatures are the Smarties – wandering humanoids that take the place of traditional powerups. 'There are a finite number of these indigenous fellows dotted around,' explains Williams. 'As well as making bases for you, they'll start creating little "presents". These take the form of traps, spells, weapons and new buildings.'

Hearing about the power-ups, **Edge** wonders how much of *MDK*'s humour was lazily miscredited to Dave Perry. One is called the Decoy Busker: 'He's one of those irritating buskers one often finds at train stations. The enemy will do away with this horror first before coming after you.'

Each of the races has its own talents. The Sea Reaper rules the ocean. She is fastest on water and has magic abilities. Kabuto relies on brute force, and can dig his hands into the ground to mould a giant clump of mud into a ball. Kabuto also sets traps all over the island. Finally, the flying Meccaryns work as a team.

'You control the centre one and the others protect you,' Williams explains. 'You will be able to build up their experience and arsenal. At level one, your four-man team will just stand and fire. At experience level ten they'll dive to the ground, run behind trees for cover and even fly behind attackers for a better shot.'

Despite the wealth of new gameplay ideas, it's *Giants*' cracking graphics that have commanded most attention to date. Bruty explains that Planet Moon achieves its graphical effects through unconventional routes. 'I don't think we're any smarter than other leading developers, we just go in a different direction. We pay little attention to poly counts and texture memory. We plough straight ahead with good old sloppy code until we're happy with the results.'

Planet Moon's six-person team might seem tiny by today's standards, yet they produced *MDK* in just 11 months during their time at Shiny Entertainment. 'Our team can work at a very fast rate – we design the game largely on the screen instead of paper. If someone has a new idea we can usually get a rough version working within a day.'

'In my experience, for every good idea you have, someone else can think of ten reasons why it will not work,' Bruty laments. 'But if you can just get it into the game, even in a flawed way, the idea grows. Great design can be an unpredictable thing. I'll happily look under any rock to find it.'



Asked what life is like without Shiny's Dave Perry, Nick Bruty responds: 'Well at least it will be easier to live up to our own hype'

THE UNHOLY WAR

Taking its cue from Shakespeare, Crystal Dynamics' first strategy game attempts to woo an audience with Romeo and Juliet-style theatrics







While Crystal Dynamics is still fine-tuning the balance between different creature types, *The UnHoly War*'s twoplayer battle is already a hoot







***The UnHoly War*'s many characters are notably diverse. Animation is reasonably solid, and the camera can often pull a long way back**

Format: **PlayStation**

Publisher: **TBA**

Developer: **Crystal Dynamics**

Release: **Autumn**

Origin: **US**

Crystal Dynamics, forerunner among PlayStation platform game producers (responsible for *Pandemonium 1* and *2*, and *Gex 3D*), is trying its hand at something different. *The UnHoly War* is a curious collision of arcade action and strategy – unusual for not trying to blend the two as many western developers have. Instead, the game's tactical and battle modes are sharply contrasted, in much the same way as *Final Fantasy VII* cuts to its combat scenes.

However, *The UnHoly War* isn't lumbered with turn-based combat – players are instead treated to a frantic, all-out action game. Just as *Return Fire* was to be primarily a twoplayer title, Crystal Dynamics' game is at its best when played in pairs. The 14 characters are used in a battle fought in an array of different arenas, viewed from near top-down.

The strategy mode can be played by either one or two contenders, taking the form of a hex-based map around which various characters must be moved. Each of the various creatures has a differing range of movement and suitability for use against opponents. Once placed adjacent to an occupied square, battle may commence. As yet, **Edge** isn't convinced about the mixture of the two styles, but work is still in progress at Crystal's HQ.

The reason for all this fighting is due to the breaking of an ancient treaty between two alien clans, the Teknos and the Arcanes. Two 'unholy' offspring result from a Romeo and Juliet-style relationship formed by members of the two factions, and it's these brothers, Vail and Jaron, who are at war. It's a pretty elaborate excuse for what's essentially a combat game with a modicum of strategy tacked on, but such things are a staple of videogaming lore.

While the game is unlikely to satisfy those looking for the last word in strategy titles, the twoplayer game already proves a remarkably compelling experience. And, as with all its titles (excluding the forthcoming, moodily lit *Legacy of Kain*), Crystal Dynamics has imbued the game with its usual colourful style and strong 3D engine. Come this Autumn, *The UnHoly War* will bring a little (much needed) diversity to the PlayStation's bulging catalogue of titles.







Lighting effects are used extensively throughout the game, illustrating its wide variety of weapons

ABE'S EXXODUS

Building on the success of *Abe's Oddysee*, Oddworld is revisited as Mudokon hero Abe steps forward to rescue more brethren from a fate worse than death





Abe's new summoning powers will allow him to seize control of the evil Slig guards so they turn their machine guns on each other

One of last year's summer sleeper hits was *Oddworld: Abe's Oddysee*, a 2D platform puzzle game of the old school variety. Originally the game was intended to be the start of a multi title series which introduced an additional controllable character with each successive release. However, such was the popularity of the charismatic anti-hero Abe that his creator, Oddworld Inhabitants, has decided to give him a second outing in *Abe's Exxodus*.

In *Oddysee*, Abe's fellow Mudokons had to be rescued from slaving in a factory that was making them into food for their Slig masters. Oddworld Inhabitants has furnished the sequel with a similarly twisted plot, and again Abe is cast as saviour. Yet more hapless Mudokons are being forced to mine their ancestors bones for crushing into a drink (tagged Soul Storm), prevented from recognising their plight by having their eyes sewn shut. Due to the powerful nature of the game's characterisation, it's surprisingly easy to feel sympathy for the Mudokon cause.

As before, Abe communicates with his trapped brethren via a series of whistles, yelps, calls and farts. However, in *Exxodus* the Mudokons are less willing to be ordered about than in *Oddysee*, requiring the occasional slap to cajole them into action. Additional factors such as bursts of laughing gas do little to ease progress, leaving the escapees in fits of giggles.

Most notably, though, Abe's powers have been greatly enhanced and now extend to enable the possession of enemy Slig guards. The captors' weapons can then be used to either dispose of their comrades, or the Sligs can be made to activate various levers. New, flying Sligs can also be possessed, allowing Abe to access higher areas.

Essentially a thorough (and less-linear) revamp of *Oddysee*, *Exxodus* is hoped to address any criticisms of its predecessor. Hopefully, the ever-personable Abe won't have to die quite so often in order to solve the puzzles.







***Exxodus* answers some criticisms of *Oddysee* by having far more varied environments, along with several new gameplay features**







As before, Oddworld Inhabitants has decorated Abe's world with some of the tastiest visuals around. Characterisation and animation are stunning, although the motion-blur shown in these screens (left) seems a little unlikely to make final code

Format: PlayStation

Publisher: GT Interactive

Developer: Oddworld Inhabitants

Release: **November**

Origin: **US**

EHRGEIZ

Originally a collaborative coin-op release from Square's Dream Factory and Namco, this free-roaming fighting game is nearing completion for the PlayStation. And it's looking pretty lean...





The multi-levelled fighting environments, plus an unorthodox control method, really lift and distinguish *Ehrgeiz* as its own game

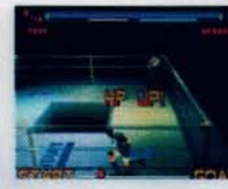
Despite frequent claims to the contrary, the beat 'em up genre has only recently embraced the evolutionary possibilities offered by polygonal engines. Following a number of 'false alarms' – including the Sega-sired innovation of a 'dodge' button, and *Bushido Blade*'s free movement married with comparatively simplistic combat – Dream Factory's *Ehrgeiz* coin-op, released in Japan this February, arguably marked the debut of the 'true' 3D fighting game with real depth.

This PlayStation conversion faithfully reproduces the crisp, well-defined visuals of its coin-op parent. Running at 60fps *Ehrgeiz* demonstrates developer Dream Factory's supreme knowledge of Sony's hardware.

It's moniker perhaps typifies its progressive design – in German, the word literally translates as 'ambition'. Players might first approach it expecting a traditional control method, whereby left or right control movement towards and away from their onscreen assailant. Yet, unusually, basic D-pad or joystick movements instead cause fighters to run in that direction – much like, for example, the likes of non-arena fighting games such as *Double Dragon* or *Streets of Rage*. To remain facing an opponent while moving, or to approach in a more orthodox manner, the player must use a separate button to 'lock' their fighter in that position.



The SquareSoft branding enables Cloud from *Final Fantasy VII* to play a part (above)





Naturally, this development is accompanied by interactive scenery. Players can climb steps, jump onto higher platforms and, in certain instances, even locate useful objects. This provides strategic possibilities the beat 'em up genre has previously lacked. One stage, for example, features a small building. By climbing onto the roof, players can adopt a defensive strategy in order to prevent their opponent from gaining a foothold, with a view to gaining a victory once the timer expires.

Unlike *Bushido Blade*, *Ehrgeiz* offers what fighting-game fans would consider a full complement of offensive and defensive moves. From counters, to throws, to convoluted combo sequences, Dream Factory's title makes few sacrifices in its attempt to break the beat 'em up mould. Indeed, it's reasonable to suggest that *Ehrgeiz*'s relative complexity rather lends itself to the home market, where players will be more inclined to invest the time required to master its many nuances.





Given the scope of the fighting arenas, projectile attacks are an obvious inclusion





Combos (above) are hardly an innovative inclusion, but their integration within a complex combat system is well handled

Format: **PlayStation**
Publisher: **SquareSoft**
Developer: **Dream Factory**
Release: **Autumn**
Origin: **Japan**

DESTREGA

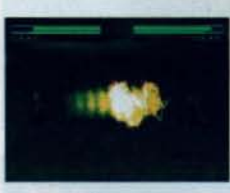
The 3D beat 'em up continues to break out of the confines of close-range combat with an unusual effort from a company once associated strictly with strategy wargames







They may appear to lack the finesse of the characters from, say, *Tekken 3*, but *Destrega*'s fighters boast a considerable level of detail









Fighting occurs at both close (above) and long range (top) – the latter obviously necessitating the use of a variety of projectile attacks

To the hardcore gamer, the Koei name is virtually synonymous with the strategy wargame. Its output over the past decade has encompassed a number of formats – from MSX to Super Famicom – yet its creative focus has remained constant, its war 'simulations' (as they are regarded) enjoying a considerable following in Koei's native Japan.

Destrega, then, is a diverse and left-field release for a company so long associated with a more cerebral style of gaming. Koei's new fighting game represents a logical progression for developer Omega Force, following previous work *Sangoku Musosu* – a weapon-based beat 'em up that enjoyed favourable critical reception in its home market, and modest acclaim in the West under the *Dynasty Wars* moniker.

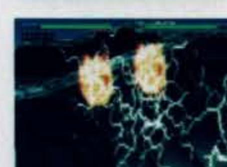
Given *Destrega*'s open, notably 3D gameplay mechanics and multi-levelled stages, comparisons with Dream Factory's *Ehrgeiz* are perhaps inevitable. However, at this early-stage, its development as a PlayStation-specific title appears to be paying considerable visual dividends. Its environments are lavishly textured, and videos demonstrated at Koei's stand at the Tokyo Game Show suggested a crisp 60fps refresh rate. In a straight bout to determine which eye candy is the sweeter, *Omega Force*'s title genuinely appears to offer aesthetic confectionery of a higher standard.

Intriguingly, *Destrega*'s combat system allows players to determine the speed and power of blows, often trading one attribute for the other. Although this is hardly innovative per se – *Street Fighter II* used the basic principle many years ago – it's certainly a refreshing alternative to the basic combo-oriented attacks made standard by *Tekken* and *Virtua Fighter*. Furthermore, Omega Force is attempting to give each attack its own individual sound, allowing players to anticipate blows and react accordingly. With large environments allowing players to either fight at close range or snipe with projectiles from a distance, *Destrega* almost appears a union of attributes from *Bushido Blade* and *Toshinden*.

Pencilled in for an Autumn launch in Japan, *Destrega*'s more unusual features could endear it to a more dedicated PlayStation owner, yet ultimately limit its mainstream success. Nevertheless, **Edge** awaits its arrival with interest.

Format: **PlayStation**
Publisher: **Koei**
Developer: **Omega Force**
Release: **Autumn (Japan)**
Origin: **Japan**





Spot special effects are, of course, de rigueur in '90s beat 'em ups, and *Destrega* obliges with a raft of flash pyrotechnics

RC STUNT COPTER

Is it a bird, is it a plane, is it even a game? Actually, as the world's first model helicopter simulator, Shiny's *RC Stunt Copter* will take interactive toys to new heights







The chase view is the more familiar way to play the game (above). For a greater and more authentic challenge, players can adopt the fixed 'standing' viewpoint

Most levels are fairly simple (above), making it easy for players to pick out targets. Later levels provide more substantial challenges (top)



Colourful (and burstable) balloons are among the more realistic of the game-oriented elements

Format: **PlayStation**

Publisher: **Interplay**

Developer: **Shiny**

Release: **September**

Origin: **US**

Hot on the heels of **Edge**'s recent feature (**E**61), Shiny is set to prove that interactive toys aren't restricted to PC desktops or *Netscape* browsers. An accurate model helicopter sim for the PlayStation, *RC Stunt Copter* aims to to teach players how to fly the real toy straight from the box.

Flying a stunt helicopter for the first time is arguably harder than driving a car. The control system is baffling, and with six degrees of freedom *RC Stunt Copter* is best played with Sony's Dual Analog pad. How the thumbsticks behave depends upon the difficulty level selected. As the difficulty increases, players are afforded more control of the rotor blades.

Aerial tracks make up the backbone of the gameplay, with 3D arrows guiding players through what amounts to be an aerial assault course. More interesting is the 'standing' mode camera system. Rooted in one spot, players must guide the helicopter as it flies away from them, just as they would in reality.

As well as simple, fast sprint courses, there are challenges based around predefined tasks, such as objects that must be collected or destroyed. But as its name implies, pulling stunts within a specified time is the final aspect to play. Shiny also claims that *RC Stunt Copter* can identify every nuance the player makes. Even in straight races, two pilots completing a course in the same time can be ranked according to the finer points of elegant copter control.

Whether PlayStation gamers will embrace *RC Stunt Copter* remains to be seen. If Shiny can pilot the difficult course between interactive toy and computer sim, *RC Stunt Copter* could be just the first of many similar titles.

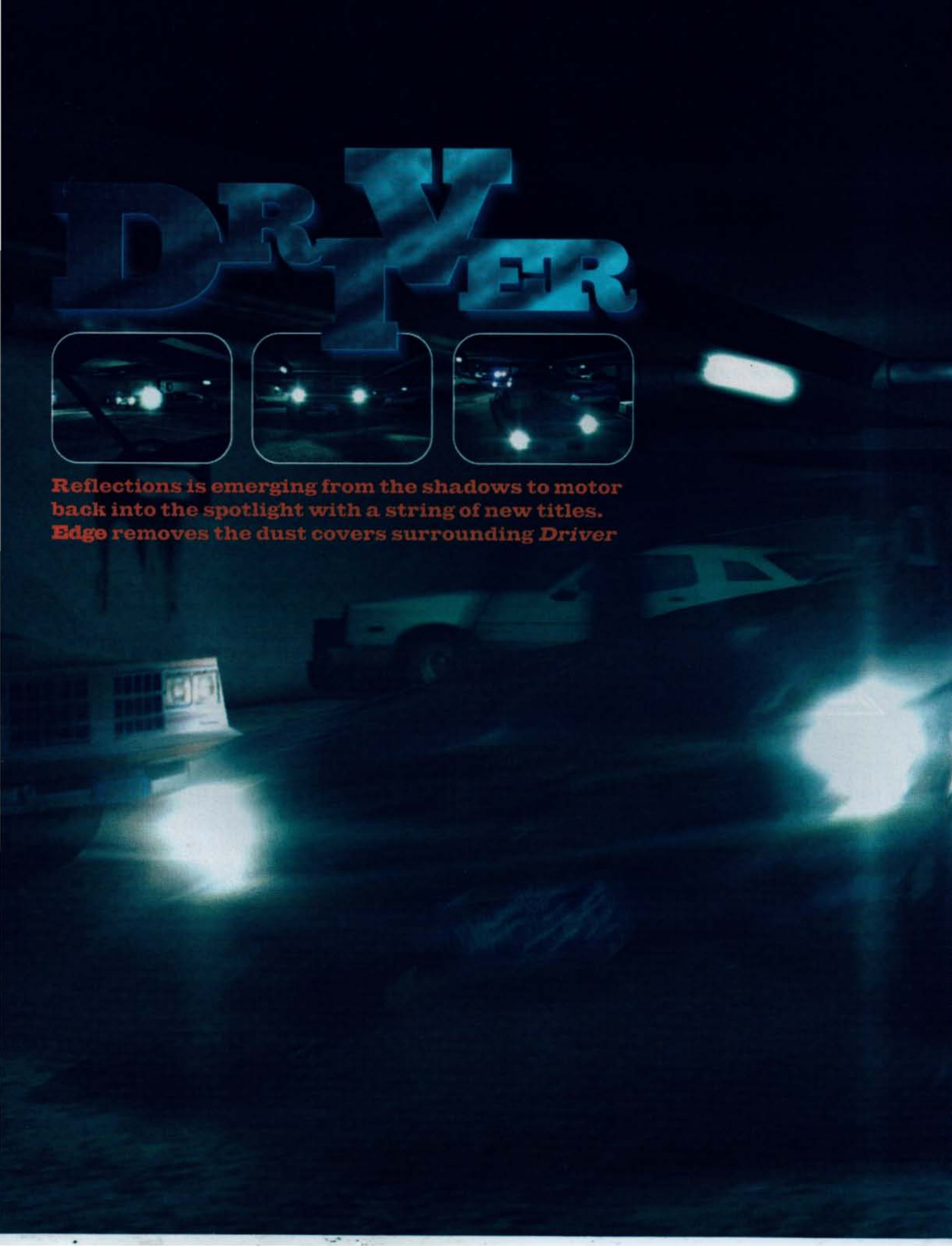




If only there were pigeons to be buzzed in the town square, then *RC Stunt Copter* would be complete

DRIVER

Reflections is emerging from the shadows to motor back into the spotlight with a string of new titles. Edge removes the dust covers surrounding *Driver*





Most of Reflections' staff take a break from working on the company's current three projects. Founder Martin Edmondson (standing, fourth from left, in white shirt)



'It was a bit quiet last night, really – most of the students have gone home.' This seemingly innocent statement from the driver as **Edge** gently recovers in the back of his taxi (after a Monday night experience unlike any it has ever witnessed) making its way to the town's diminutive airport for a (too) early morning flight back to the office is, quite plainly, wrong. Admittedly, the streets could have accommodated a few more individuals, but that's purely because everyone packed the town's countless pubs and bars before progressing en masse to its numerous clubs. Allegedly, Newcastle is just behind Barcelona as the nightlife capital of Europe, a claim **Edge** is happy to readily believe. The prospect of a weekend in Newcastle may seem oddly unfathomable, but it does at least partly answer the question of why Reflections has remained there all these years.

The company was founded by Martin Edmondson 14 summers ago, and boasted an employee count of just two – including Edmondson. After a period writing games for the BBC Micro, the developer moved on to Commodore's Amiga for which it released, among others, the *Shadow of the Beast* series. Its first 32bit project, *Destruction Derby*, became Europe's fastest-and biggest-selling PlayStation title of 1995. The improved 1997 follow-up faced tougher competition and failed to equal its prior achievements, but nevertheless managed to break the million-sales barrier.

Little has been heard from the 40-strong development outfit since. And while its staff has no doubt sampled the crazed local nightlife extensively, work has carried on, and Reflections is ready to bounce back into the videogames arena with its three titles currently in production. One is still secret, the second is *Steam* (showcased in Alphas), and the other is *Driver*. Most people would expect the latter to be some sort of racing game, but according to Edmondson they'd be missing the game's ethos.

With *Driver*, Reflections is looking to achieve 'the closest thing possible to filming your own Hollywood car chase as current technology allows,' reveals Reflections' founder. 'You're able to create all the situations yourself, have full control over the direction and produce something that when you look at it, is as close as possible to a real film.'

Reflections is looking to achieve 'the closest thing possible to filming your own Hollywood car chase as current technology allows'

To this end, the game offers the most comprehensive replay-making facilities around, including an impressive array of zoom and pan options, lens choices, as well as the obvious ability to place cameras anywhere within the environment. The interface controlling the various options is surprisingly user-friendly too, and even just a few minutes' work can ▶






The game's cities are based on their real-life counterparts: San Francisco's Chinatown district (top left). In addition to their inspired handling dynamics, cars suffer realtime damage and quite easily lose body parts in the process (main)

◀ produce decent results. Mixing time and imagination, there's little to stop a player coming up with a sequence the majority of contemporary Hollywood directors would give their over-priced, collapsible, canvas-backed chairs for.

But *Driver* isn't just about interactive replays. Obviously, there's a game in there too, and based on its current form, it could turn out to be a very good one. Set in the '70s, players take the role of a muscle-car driver for hire, and must decide whether to accept jobs offered to them via an answering machine back at their apartment. These are fairly diverse, ranging from picking up a bank robber once he has completed his withdrawal, to tailing a rival heavy across town. The towns – and there are four of them – contain 30 to 40km of road and are based on their real counterparts so that players can, for example, powerslide their way around Miami's grid-like streets or test their car's suspension in San Fransisco's Chinatown.

There's little to stop a player coming up with a sequence Hollywood directors would give their collapsible, canvas-backed chairs for

The handling dynamics are an astonishing feature, and easily challenge *Gran Turismo*'s level of realism. Cars rock from side to side after sudden direction changes, and lean over as they negotiate a corner, with impressive authenticity, even occasionally losing a hubcap in the process. It's an aspect Edmondson is understandably proud of. 'It's a real physics-handling model so it is absolutely correct, then you make sure that in being correct it is actually still playable so there are certain things you can put in there to just sponge some of the effects – for instance, you don't get a very sudden change from oversteer to understeer,' he explains.

'An enormous amount of time was invested on the dynamics particularly as American cars feel a lot heavier than modern European cars, especially during cornering. Also the collision dynamics – when we did *Destruction Derby 2* the collisions were proper in 2D and threw the cars up in the air, but they didn't land convincingly. Whereas the new dynamics engine allows you to throw a car on to its side or its roof and it



In addition to the player-controlled car's headlights, *Driver*'s streets will be lined with lamps in the final version. The other vehicles will cast their own lights too, of course









Despite losing some of the more processor-intensive effects, the PlayStation version (above) is remarkably close to its PC cousin



Reflections plans to use Sony's Performance Analyser on *Driver* to get the best out of the PlayStation version









Reflections is placing a lot of emphasis on the ability to create highly cinematic replays, such as the above sequence. Players will be able to customise any aspect to make their own film

will stay there, rocking on its roof. There are collision points all over the car – not just a brick – actual 3D representations of the car, whether it's rolling or tumbling.'

Another interesting characteristic is the way the cities have a 'real world' feel to them. Cars stop at traffic lights and indicate before they turn. When not chasing the player's car, police are patrolling the streets or are at the scene of an accident. Leaves swirl around in the vehicle-induced air disturbance and paper and dustbins will litter dark alleys, waiting for a car to disrupt their arrangement. And, of course, fire hydrants are there to be smashed into during high speed pursuits. Reflections is unwilling to reveal too many gameplay elements yet, or how they'll affect the finished product.

The inspiration came 'from wanting to do a game that was based on Hollywood car chases – "Starsky and Hutch", "Bullit", "Smokey and the Bandit", "Cannonball Run" – all those films belong to an era in the '70s that has never been repeated,' enthuses Edmondson. Surely 'Basic Instinct', despite its plot, merits a mention? '"Basic Instinct" is actually quite a good one – that really stood out – but it's rare.'

It would be tempting to categorise *Driver* as a 3D version of *GTA*, but that would be missing the essence behind Reflections' title (plus, the project was started 18 months ago).



Smoke effects and leaves (above) will make the final version. Impressively, both are affected by wind blowing

The cities have a 'real world' feel. Cars stop at traffic lights and when not chasing the player's car, police are patrolling the streets

The whole game exudes the '70s, very early '80s, atmosphere of Hollywood films that Edmondson is so keen to capture and together with the (few) gameplay details the team is ready to disclose at this stage, the finished product should have a significantly disparate feel to DMA's crime fest.

After all, the Newcastle-based developer has a history of doing things slightly differently to everyone else.

LIVE A LITTLE

Every other game developer programs levels, enemies and extra lives. Cyberlife makes DNA, biochemistry, deserts and *Creatures*. That's life, says creative director Toby Simpson

Secret Agents · Creatures 1 · Creatures 2

Secret Agents

Independent animals with a license to think

Most computer software is cumbersome and hard to understand. Most artificial intelligence is stupid.

Agents aren't. In software engineering terms, an agent is like an animal, say a pet dog. A dog just does what it can. It's not known what's going on inside its head, but then who really needs to know? Dogs like to eat and chase sticks. Dogs can run and bark. Most dogs can't change channels on the television, but that's okay because they don't like to watch TV.

It's no coincidence, therefore, that Cyberlife uses agents to create its *Creatures* games. Every Norn – the furry inhabitants of *Creatures* – is an agent who lives in the world of Albia.

Creatures 2 · Emergent Systems

Suck not Blow The *Creatures* code doesn't force knowledge into Norns' heads. Agents are independent beings – in programming terms, they probe their environment for information like temperature or vision, as and when they need it. 'Suck not Blow,' says Simpson.

Creatures 1

How did Cyberlife's first game shape up?

Cyberlife's first attempt at artificial life (A-life) arrived in Autumn 1996. Caught up by the collapse of Time Warner Interactive in the UK, its game still sold well in the US and Europe and has done brisk trade on GTi's Replay label. Some 500,000 copies of the breed-your-own game have been sold to date.

Every *Creatures* purchaser received the Albia game world and a disk containing six eggs. Each egg contained a Norn, with unique DNA. Hatch a couple of Norns, start them breeding and, theoretically, anything might happen.

Sadly, not a single Norn learnt French or mathematics. Indeed, due to a programming glitch they spent an awful lot of time playing in Albia's lifts. But Cyberlife had successfully proved that a game based around genetics could be as popular as *Quake*.

Internet People · Secret Agents · Evolution not Revolution

Ecosystems

Making the *Creatures* world more real

'In *Creatures 2* we've brought the whole world to life,' says Simpson. 'What made *Creatures* attractive was the interactions with what you were able to believe were real living systems. To make those systems behave even more like living systems, we've concentrated on making the environments more real – proper weather, seasons and so forth. We did that without mirrors and strings – the wind blows because there is a pressure difference.'

Emergent Systems · Evolution not Revolution · Internet People







Creatures 2

The cleverest critters just got cleverer

Creatures 2 looks and sounds better than the first. More importantly, its Norns are smarter, and many of the little glitches from the original have been ironed our. No longer will Norns play in the lifts ad nauseum. The software has evolved. There are more toys for Norns to play with, new lifeforms including fish and plants, and a food chain binding everything together.

While it might sound more complicated, the realism makes the game easier to enjoy. 'Science can seem a little bit complicated sometimes, especially when it's rubbed in your face,' admits **Toby Simpson.** 'In the original *Creatures* we presented a lot of science in front of people, when actually all along they just wanted to play with the animals.'

Evolution not Revolution · Developer Program · 2020 Vision

Emergent Systems

Letting nature run its course

The natural world runs without rules. No grand plan makes birds whistle at dawn or rain clouds gather over the Amazon rainforest at 6pm – there are just dozens of little laws that fit together to make up the big picture.

Law and order that arises out of apparent chaos is called an 'emergent system'. The stock market is an emergent system. Any intelligence that *Creatures'* Norns exhibit emerges from the rules laid down in their genes. When the Norns start talking to each other, emergent systems are at work.

'Dealing with things from the bottom up means the problem is more managable,' says Simpson. 'The cost is that you're no longer in full control of the system you've created – but that shouldn't matter. If it's reality you want, then it's reality you'll get.'

Ecosystems · Evolution not Revolution · Internet People

DNA

Rebuilding the building blocks of life

Deoxyribonucleic Acid (DNA) maketh the man – and the Norn. DNA is responsible for transmitting hereditary characteristics and putting bodies together. Cyberlife attempts to mimic DNA in *Creatures 2*. So rather than hard programming in specific behaviours, potentials and tendencies arise out of the Norns' DNA. Behaviour arises out of experience.

When Sandra Linkletter did genetic work for *Creatures 2*, she didn't need to learn C++ or assembler. 'She didn't write one single line,' explains Simpson. 'She's sitting inside the gene editor creating chemical reactors, emitters, brain lobes, receptors, appearance genes, stimuli genes. It's all done with genetics.'

TrueType Gaming · Artificial Intelligence · Evolution not Revolution

Internet People

Over 400 *Creatures* sites are swapping eggs, toys and genes

'It surprised the living daylights out of us,' says Simpson. 'I used to say we were second only to the *Quake* Web populace but that's not true any more – we are the biggest.'

'The diversity of the various thirdparty things that have appeared is truly beyond belief. And this has created a huge community. With any large community you get specialisation within it, and people who don't like some people and so on. It's what happens in real communities and has in fact driven the whole thing forward.'

Developer Program · Creatures 1 · Ecosystems



Everyone else is wrong Why does a server in Seattle need to know that Eric the thief from Croydon is fighting Brad the warrior from Delaware? Because all massive multiplayer games use a client/server model whereby one central hub directs the whole world. Why not let every player's machine take responsibility for the nearby bit of world and use intelligent agents to manage the gaps? After all, says Simpson, it's just how the Internet works.

The Developer Program

Cyberlife opens up to thirdparties

'Since we weren't expecting anyone to create anything more for *Creatures*, we weren't equipped to help them,' admits Simpson. All that's changing with *Creatures 2*, which will be supported by a thirdparty development program.

'The first guy we were aware of was Alexander Mell who lives in Austria. He created two objects initially – he's now created hundreds.' Cyberlife helped Mell (and those who followed) with documentation and tools – a supply of information that has evolved into a full-blown developer program. True to the Cyberlife philosophy, the final shape of the program will emerge over time.

'We want to give people an opportunity to make some money out of the work they're doing,' says Simpson. 'We're going to do a first cut and we're going to evolve it.'

Creatures 2 | Internet people

Stat attack The Noms in *Creatures 2* have 520 genes (up from 320). Fifty new chemicals and three times as many objects have been added to the game.

Evolution not Revolution

A thousand-mile journey starts from a single step

'We're concentrating on the construction of believable, self-consistent environments,' says Simpson, outlining how Cyberlife would like to create games in the future.

The Cambridge-based company has a blue-sky research department working on a weather system that can erode 3D landscapes. 'You grow a tree, you don't draw it. If you want a chasm, you run a hill under 50 million years of wind and rain.' Mountains become valleys before **Edge**'s eyes.

It's an R&D department that invents quirky routines which may or may not make it into future products – like random cosmic rays that alter the structure of DNA and the fate of a species forever.

Creatures 1 | DNA | Creatures 2

TrueType Gaming

Software with a ten year guarantee

Simpson asks: What use was all the work that went into *Doom* when *Quake* came out? Instead, developers should be making stuff that lasts.

'Think of TrueType fonts,' he says. 'If you've got a monitor and a graphics card that's capable of displaying 5,000x5,000 pixels, you still have a perfect letter 'O'. A TrueType font doesn't tell you where to put the pixels, it tells you how to draw the letter O.'

Here Simpson sees parallels with the DNA at the heart of *Creatures 2*. 'It's construction details – and that's what genetics is all about.'

'Follow that through and you end up with a system you could call TrueType gaming. You specify that a table is made of oak – it's one inch thick, it's this old... The PlayStation goes "Oak? You've got to be kidding, you're just getting a brown texture". But three years later you run that same table on a faster machine and it goes, "Oak, no problem", and gives you something much better.'

Evolution not Revolution | Man-made Man | DNA

Extra critters Two new humanoids join the cuddly Noms and the vicious Grendels this time around. The Ettins are the everymen of Albia, less individualistic than Noms but, since they can interbreed, an interesting dose of genetic variety. The other race, currently nicknamed 'Doozers' (in homage to the little builders of Henson's 'Fraggle Rock') are wandering English teachers who help Noms to learn their language.

2020 Vision

Cyberlife has an eye on HAL

'The aim of Cyberlife is human level intelligence by the year 2020,' says Simpson flatly. 'We call this our 2020 vision.'

'We're aiming towards creating a biological model, accurate enough so that human-level intelligence just emerges, inside a machine. Now, you're not going to get that in isolation. If you gave birth to a human being, stuck it in a concrete room with 50-foot-thick walls, no windows, no doors – just pumping air and food in – that creature would not develop into an intelligent human being. You have to provide a stimulating environment.'

TrueType gaming | Evolution not Revolution | Artificial Intelligence









The just-visible 'Doozer' (above) is just one of the new creatures to emerge in this second version. The 'Doozers' serve to educate the primitive Norns by teaching them English, though they realise the benefits of fishing pretty quickly

Sandra Linkletter

***Creatures* fan turned Frankenstein**

Sandra is an American molecular biologist who tinkers with *Creatures* in her spare time. She ended up creating much of the genetics for *Creatures 2*.

'She's been involved [professionally] with real genetics and biochemistry,' says Simpson. 'She started playing around with the creatures' DNA and achieved some quite remarkable things. So we took the DNA that she'd created and shipped it with the Life Kit add-on pack and we asked her to produce the core genetics for *Creatures 2*.'

Creatures 2 — DNA

The Appliance of Science

Norns in VCRs, traffic lights and fighter jets

'The biggest problem we have is where *don't* we apply them!' says Simpson, suggesting that Cyberlife's Norns are just a Trojan horse (or a cash crop). 'If you step back and look at what you've got – organisms that behave like real animals – then good grief, what can't you use them for?'

The examples come thick and fast: retail modelling ('Doing 50 years of accelerated shopping, and finding out exactly where the coffee should be!'); intelligent video recorders; traffic lights (a run of lights could change to green for the police); the military (Cyberlife is making a virtual fighter pilot). The key to A-life creatures is their flexibility. 'They don't need to be born knowing how to solve every problem they'll come across.'

Evolution not Revolution — Man-made Man — Artificial Intelligence

Artificial Intelligence

The smart stuff behind *Creatures 2*

Like its predecessor, everything in *Creatures 2* is based on genetically specified, biologically inspired structures. Say what? Cyberlife models living things as closely as possible, hoping that real-life intelligence will appear as a result. By imitating how brains work (with neural networks and biochemistry) 'intelligence' emerges.

The AI works through Drive Reduction. In basic terms, a Norn always tries to alleviate what's bugging it. If its stomach is empty, it will excrete acids that will reach the nervous system to produce hunger in the brain. Creatures learn what relieves such feelings (eating, for example). Every time it works, the lesson gets stronger. If they eat something poisonous, they'll remember that too...

The trouble is that real intelligence considers the future. Temporary pain can be endured for future gains.

'It's the thinking that's the real problem here,' says Simpson. Diving deep into Norn genetics with the science kit, he shows **Edge** an innocuous-looking equation. Apparently, it allows a neuron's output to alter according to feedback from other neurons. Simpson says it could be the missing link that Cyberlife is searching for.

2020 vision — Emergent Systems — DNA

Man-made Man

Cyberlife's brave new world

Toby Simpson seems certain that artificial life will eventually result in entities at least as intelligent as human beings. Ethical questions are interesting to him, but no reason to halt development. He even alludes to the promise of immortality through replication onto a machine.

'Being able to take believable, real, artificial organisms and put them inside a system is going to make a great difference to the quality of our lives,' Simpson believes. 'We're going to learn a lot from them – they're going to learn a lot from us.'


TOSHIBA
Dreamcast
OPEN
NINTENDO64

CONSOLE WAR

1999 has long been associated with apocalyptic destruction, but what does every miserablist sooth sayer's favourite year have in store for the console market? Edge takes a look at the four key contenders



Despite being perhaps the most difficult-to-please kind of consumer in society, the vast majority of console gamers today must be pretty happy with their lot. PlayStation owners have a system with unrivalled software support and titles such as *Gran Turismo* and *Tekken 3* whose quality cannot be found on any other system. Nintendo 64 devotees, too, if not exactly overburdened with new releases, can at least boast of a software base comprising some of the greatest titles ever created.

But that's today. What about tomorrow? Technology just happens to have a habit of not standing still, and a new wave of console gaming technology is waiting patiently in the wings – hardware that could, ironically, give Sega the last laugh of the '90s, or even lay foundations for a Trojan Horse-style assault on the mass market in the case of Project X.

Over the next eight pages **Edge** looks at two emerging technologies alongside two firmly established formats, and ponders how the existing consoles will react to heavyweight competition from some of the world's leading electronic entertainment brands.

1998 has seen some radical upturns in videogaming; 1999 may bring with it some radical upheavals...

PROJECT X

As befits its B-movie moniker, Project X aims to turn the world's movie lovers into gamers overnight

The story so far:

It sounds like the kind of thing any group of savvy engineers might think up over a pint: 'What if we designed a media processor fast enough to decode MPEG and play games? It would be cheaper than existing hardware, so we could license it to DVD hardware companies and make a killing on game royalties, especially since DVD players will have far better penetration than games.' Whereas most engineers would have dismissed the idea as too difficult to implement, the founders of VM Labs, well, founded VM Labs. It hasn't been easy: developing hardware, pitching it to conservative consumer electronics companies, creating robust tools for a unique game development environment. But by E3, the company was able to announce that, in fact, Project X was real and that hardware manufacturers on three continents were including Project X technology in their 1999 DVD systems.

Hardware:

Unlike every other modern 3D console, Project X does not provide dedicated 3D hardware. Instead, the system essentially consists of RAM (6Mb being the minimum) and four processors on one chip. The net result is a media processor capable of performing 1.5 billion programmable instructions a second – that's 1,500 MIPS versus the PlayStation's 30. That's enough to decode MPEG 2 in real time, and it's enough to create 3D graphics engines – polygon, ellipsoid, infinite plane – in software. Although there is a VM Labs minimum spec, the company expects upgrades and expansions in the future; add-ons like cameras for video telephony and modems for Web browsing and multiplayer gaming are provided for in the hardware. Not every developer wants to create its own graphics engine from scratch, so ensuring that quality development tools and libraries exist will be essential. (VM Labs says it is committed to providing the most robust development tools, libraries, and documentation yet seen on a console.) The freedom given developers by the media processor is a double-edged sword: it can enable them to make fantastic engines and graphics, but it may hobble less experienced developers.



Software:

Software is a major vulnerability for VM Labs. First, because of the unique nature of the media processor, software quality may vary widely. Second, convincing publishers to develop for a system that will not be sold strictly as a gameplaying machine may be tough. Third, pushing titles over to Project X from other platforms could prove a nightmare-like proposition because of its unique chip setup, making for significantly more toil than, say, a PC-to-Dreamcast conversion. Still, the potential installed base is very attractive, especially for mass-market games like Berkeley Systems' *You Don't Know Jack*. As for VM Labs' own software output, the demos **Edge** has seen were not designed to look pretty, but to impress developers. However, although grafting a port of *Doom* onto the sides of a spinning cube may be a clever little trick, many will be anxious to see more complete games. The list of confirmed developers includes Activision, Berkeley Systems, Capcom, Crave, Fox, Hasbro, n-Space, Psygnosis, and THQ. Building thirdparty relationships from scratch is a tough job, and VM Labs will need to do it masterfully if Project X is to succeed.

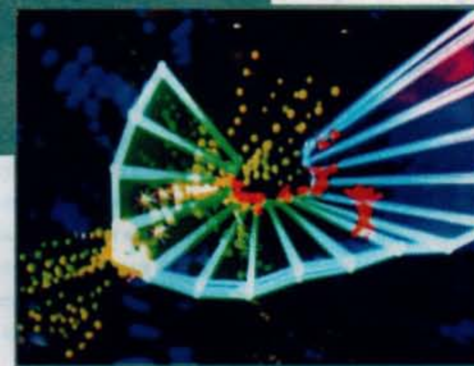




If DVD players become as ubiquitous as home VCRs, then just ten per cent choosing to include Project X technology would result in a massive installed base for VM Labs

Marketing:

Marketing of Project X is tricky, but VM Labs plans on putting its own money behind the technology, in addition to the money it expects hardware manufacturers will spend to advertise Project X-enhanced systems. The first real marketing test, of course, will be coming up with a proper name to replace Project X. Because of the DVD format, it is easy to imagine a number of unique marketing tie-ins, such as Fox including demo versions of Project X games on DVD movie discs. One thing Toshiba and other manufacturers won't be able to do, though, is sell the hardware at a loss to drive sales. This could keep Project X systems at a higher price than other game systems (which routinely retail at a loss), although Project X DVD players should cost about the same as other DVD players. Finally, it's likely Project X-enhanced DVD players will be marketed as DVD players, not game machines, so Project X will have an entirely different marketing strategy than traditional game machines.





Competitive analysis:

Project X is so different from traditional game systems that it is difficult to make direct comparisons. The only comparable system was 3DO, but the juxtaposition is unfair, since 3DO was ultimately only a game machine. Multifunction set-top boxes traditionally have not done well, but they've been overpriced and underpowered. **Edge** can say this: if Project X achieves a 30 per cent penetration in the DVD market, it will have active units in more homes than any console ever. And with that level of penetration, development should be inevitable.



The company line:

One of the criticisms levelled at VM Labs recently is that the company has been trying to position Project X as an edutainment platform as well as as a game system. **Richard Miller**, CEO, responds: 'Are you kidding? Hardcore games with powerful 3D graphics, that is the price of entry. We'd be crazy not to focus on that, and that is our number one focus. All I am trying to say is that because Project X is going to be embedded in the next generation of video entertainment platforms, which are likely to have a much broader demographic and a larger user base, there is an opportunity for publishers and developers to develop new applications, where previously the niche market was just too small. There's an opportunity for companies like Purple Moon to actually get to their audience. So it's an opportunity, but high-performance, kick-ass, 3D titles, that is what we're all about, and that's really where all our attention is.'

And what about the lack of dedicated 3D hardware? How much of a liability is that? 'Developers don't want polygons, they want MIPS [laughs]. Polygons are all well and good, but if you ask developers, what they really want is to be able to program each pixel individually with their own routines, their own functions, their own filters, their own effects, and there isn't a platform in the world that lets you do that today. You know, polygons are still great... [but] don't prejudge what [developers] would like to do. Don't design a 3D polygon engine that says, "You really want to do your polygons this way." Let them go and decide for themselves. Our developers are writing their own 3D polygon pipelines. Even though we have provided them with what we think is a pretty good one, they still want to write their own because that's the way they can really differentiate their title.'



Future prognosis:

The implications if Project X succeeds are staggering – game machines in every home attached to a TV could completely change the industry. The Project X business plan is nothing short of brilliant, and with the announcements of hardware partners, it's already working. Will it do as well as hoped? If prices of Project X-enhanced DVDs are kept close to those of regular DVDs, and the company signs more major hardware players (such as Matsushita), Project X may have a good shot of reaching critical mass, either in late 1999 or 2000. But in the end, of course, it all comes down to software support.



Although the Project X one-chip solution includes no specific support for 3D, it can easily cope with polygonal visuals. Only time will tell how hard it can be pushed...

Bottom line:

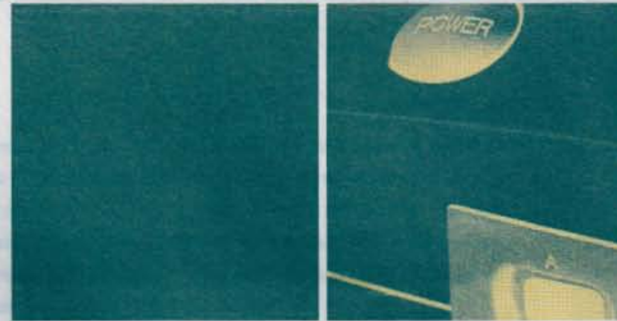
If the software is there, if the cost isn't prohibitively high, and if the hardware manufacturers stand behind the system for more than one or two hardware iterations, Project X could succeed. But the only thing that's certain right now is that Project X is a very, very interesting concept.



▶

DREAMCAST

Last time around, Sega got it all wrong. This time, it's taking nothing for granted. Edge interprets the dream...



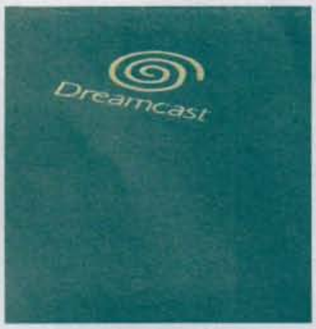
The story so far:

Few companies have fallen as far, or as fast, as Sega did between the high of the Mega Drive and the low of the Saturn. With terrible products such as Sega CD and 32X, and weak 'flagship' games like *Bug*, Sega managed to almost completely discredit what was once one of the most respected and recognised brand names in the videogame market. Even with major corporate shake-ups, some people doubt that anyone will ever again be able to successfully market a consumer game machine with the word 'Sega' on it. And that may be just the way Sega likes it. Once again, as in the Mega Drive days, the company is in a 'nothing to lose' position, allowing it to take risks other companies cannot as it seeks to re-establish itself as a premier console brand.



Dreamcast's VMS device is a canny nod towards the social games popular in Japan

Hardware:



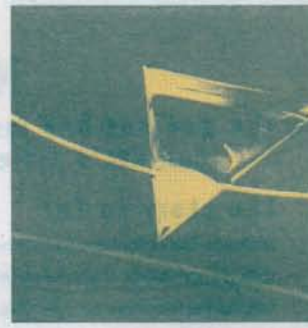
For the first time in history, Sega's home hardware – complete with 16Mb of main memory and a £299 price tag – is truly impressive. After abandoning a deal with 3Dfx for the powerful yet expensive Voodoo technology (a lawsuit is still pending over the rift), Sega went with the cheaper, unproven PowerVR second generation technology. The company added a powerful CPU from Hitachi and an optional OS from Microsoft whose DirectX 5.2, included with Dreamcast, fully supports all the special features of PowerVR 2G, and makes them accessible to developers inexperienced with the esoteric infinite-plane rendering technique PowerVR uses. Sega's Visual Memory System PDA will put a mini screen in the controller, an advance that has the potential to considerably advance certain types of games. The machine also carries a modem as standard (and an ISP and a dedicated matching service), although strong rumours suggest that this may be dropped for the UK release. While the CPU clocks 'only' 200MHz, it is optimised for floating-point operations (essential elements of 3D performance). In short, Sega has more than delivered what it needs to on the hardware side. When it launches in the UK late next year, it should still be capable of significantly better performance than state-of-the-art PC setups.



Like the name, Dreamcast's controller is growing on Edge. But will the system be strong enough to tackle PS2?

Software:

Sega will need killer firstparty apps and strong thirdparty support. The first part is no problem – even though the Saturn ultimately failed, Sega engineers cranked out many excellent firstparty titles (such as *World Wide Soccer* and *NiGHTS*) and coin-op conversions. As for the other element, Sega of America's head, Bernie Stolar, was instrumental in driving thirdparty development for the PlayStation during his time at Sony, and presumably he brought his contact list with him to Sega. The highest installed base will be on PlayStation and N64, but strong thirdparty support is expected for Dreamcast. Why? Because no one wants to see Sony get a stranglehold on the market; certain games simply can't be done on current systems; porting PC titles should be easy thanks to the Windows CE-based OS; development teams want to play with new toys; and, if for no other reason, publishers are afraid that competitors will beat them to 'the next big thing.' **Edge** expects many developers to commit to a Dreamcast game for launch, or for shortly after. Then, if sales take off, development will continue. If initial sales are poor, however, don't expect to see a lot of second or third efforts.



Marketing:

Although Sega has yet to reveal its marketing strategy in Europe, the company's US branch has announced a $100 million budget for the Dreamcast launch campaign in America. That's probably enough money, but it has to be spent wisely. Foote, Cone & Belding, the lead agency for Dreamcast, is a good choice: the company has done work for MTV, Taco Bell, and 3Com. However, Sega still faces significant marketing challenges, particularly at retail, where relationships were sorely hurt by the Saturn. Fixing the retail picture is likely to occupy a great deal of Sega's time over the next 18 months. Finally, the name Dreamcast seems to be growing on the industry, despite many early reservations. Is it melodramatic? Perhaps, but the system may be powerful enough to pull off a melodramatic name successfully, and it certainly attracts more attention than the merely perfunctory 'Katana.'



Dreamcast's controllers were modelled on Saturn's analogue version. Indeed, early dev kits utilise the ageing pad

Competitive analysis:

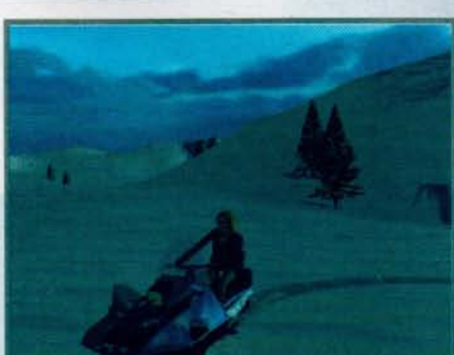
Sega seems to be doing everything right this time, but Sony and Nintendo are not simply going to bow out. Expect the console wars to get ugly next year. The fact is, it is more sound economically (at least in the short-term) to develop for an established platform, and convincing developers otherwise will be tough. Sega will also have a rough time at retail, even at £249 or £199, especially if Sony follows Nintendo to £99, with mountains of cheap games available.

The company line:

Given the success that the PlayStation and Nintendo 64 enjoy in the market right now, how hard will it be for Sega to court thirdparties? **Lee Caraher**, VP of corporate communications at SOA, says: 'It hasn't been hard at all. We met with everyone at E3, and we were very happy with the results – there are a lot more people signed up than we've announced. As for installed base, I'm not concerned about that at all. If you went on that, you would never introduce a new platform. Thirdparties are very excited.' Although the Dreamcast specs are impressive now, the system won't be out for 18 months – will it still look as impressive then? 'In terms of power, Dreamcast is so powerful that it's becoming a non-issue. Essentially we have a level of specs so developers can make the games they want to make, with all the barriers gone. Traditionally, when developers start a game, they have this great concept, and it's going to look great, but by the time it gets to market, they've had to compromise – "I have to trade off audio for speed, I'm going to have to hide all these walls, etc." With Dreamcast we've eliminated all those barriers. Everything has so much memory you don't have to worry about it any more, you don't have to do tricks to limit yourself. It just won't be an issue.' Sounds great, but why do those outside Japan have to wait 18 months to see the machine? 'We decided not to launch this year so developers would have time to do software that does everything they want, so they don't have to make compromises just because of the system's launch date.'







Warp's *D2* (above) is complex, but how far will Sega's conversions of its own coin-ops (top) push Dreamcast?

Future prognosis:

Dreamcast looks great so far, both on paper and in demos. It has powerful hardware, and Sega is signing up the best thirdparties in the business and refocusing its entire development effort in Japan towards Dreamcast (see E60). At the same time, it is going against deeply entrenched competitors during the most robust market ever. No one – not retailers or developers – wants to upset this market. In the end, though, it will come down to gamers and games. If Sega can provide compelling launch software and pull in substantial initial sales, getting retailers and developers aboard will be no problem. The next generation race is by no means over, though – it's barely begun – but Sega is where it needs to be today if it hopes to win in 1999 and beyond.

Bottom line:

Sega is in the best position it's been in since before the launch of the Mega Drive. Still, a lot can happen between now and the Western premiere of Dreamcast next year, and the last four months of 1999 may prove the most critical in Sega's history. Sony and Nintendo know that too. Expect next Christmas to be among the most brutally competitive this industry has ever seen. However, between its hardware, marketing savvy, and the painful lessons learned from its own history, Sega should be ready for the challenge.

▶



NINTENDO 64

◂ The N64 has had just two years atop the technology tree. Can NCL's titles and the Dream Team hold back Sega?



The story so far:

Nintendo first announced its SGI co-designed 'Project Reality' console in August 1993. After numerous name changes and delays, the Nintendo 64 finally shipped in Japan on June 23, 1996 and in the UK in March 1997. Despite the long development cycle, one thing that never wavered was Nintendo's commitment to the cartridge format. Although carts turned off many thirdparties, Nintendo didn't seem to care: it was confident that it could succeed on the quality of firstparty software alone. And for the most part, it has. While some thirdparties (notably Acclaim) have made significant contributions to the system's library, the N64's success has tracked neatly with the quality of first- and secondparty releases. Despite the PlayStation's head start, the N64 sold exceptionally well until last Christmas (especially in the US), when a lack of software enabled PlayStation to firmly cement its lead. Still, many N64 titles, especially firstparty games, still manage to sell in similar numbers to their PlayStation equivalents in global terms.

Hardware:

The N64 is based on the same technology as SGI's $50,000 Reality engine which, although cutting edge in 1993, would be hard-pressed to keep up with Voodoo2 today (achieving high polygon counts alone has consistently given N64 developers considerable headaches). But the biggest hardware limitation on the N64 right now isn't raw performance, it's memory. The system only has 4Mb of RAM, and the cartridge software format limits the number of textures. The 64DD should have alleviated both of these problems (it was to come with a 2Mb RAM expansion pack and store up to 64Mb of data on a disk), but its release in the UK now seems doubtful. Nintendo pioneered the analogue digital stick (a concept shamelessly stolen by its competitors) and continues to innovate with add-ons such as the Rumble Pack, as well as a proposed speech-recognition unit. Altering the microcode of the MIPS processor means N64 engineers will be able to improve performance for a while, but without the RAM expansion pack, developers will be unable to fully capitalise on the microcode improvements.



N64: showcase to museum piece in two years?

Software:

Nintendo never intended to compete in quantity of games, but in its first year, the company, and more spectacularly, thirdparties, failed to deliver on the quality promise (with certain exceptions like *Mario* and *Wave Race*). Since then, the quality of most titles has improved, as developers have come to terms with the difficulty of developing for the system. Still, the limited number of thirdparties means that much of the system's fate lies with Nintendo and secondparty Rare. When Nintendo and Rare deliver high-quality software, interest in the system increases. If high-quality software isn't delivered on time (take *Zelda*), interest wanes. Thirdparty software delivery rates are increasing, especially as cart prices drop, but ultimately, N64 is all about Nintendo's software.



Marketing:

Although Nintendo's marketing lacks the cool thrust of Sony's, there's no arguing with the results. Nintendo has the most loyal fans in the business, it gets a great deal of mainstream press, and it has fantastic retailer relationships. The company has focused on the younger age groups, and although it is successful there, 12-year-old boys are becoming a smaller and smaller segment of the market. It's unlikely that Nintendo is going to be marginalised in the near future, but appealing to older gamers is difficult when the marketing





Did Nintendo enter the market too late with its 64bit console?

Out with the old?

'Everything is going so good right now, with the PlayStation as a kind of de facto standard and Nintendo as the alternative that keeps [Sony] from acting too monopolistic. I'm worried about any change at all. I'm worried that Dreamcast is going to screw everything up.' Anonymous developer, E3.

Perhaps he's been reading a little too much Nostradamus lately. Or perhaps its the general air of premillenial hysteria currently circulating the globe. But many expect 1999 to be a frightening year for the videogame fraternity.

The theory goes like this: every new generation of hardware is preceded by a tumultuous industry slump. Before the NES premiered in 1985, for example, the console market was considered dead. Similarly, when the PlayStation arrived in 1995 it tore apart a fragmented market in which new consoles like the CDi, 3DO and Jaguar were vying for attention against the ageing SNES and Mega Drive machines; which were considered dead within six months of Sony's hardware launch.

So does this mean the PlayStation and N64 are about to become relics? Will DreamCast and Project X become the two horsemen of the videogame apocalypse, reaping catastrophic 32/64bit carnage in their wake?

The answer, of course, is no. For a start, it is wrong to read too many patterns into the way the industry has developed so far. Yes, there have been booms and busts, but there is no overriding pattern; new technologies come along all the time – some die, some prosper – and it is way too simplistic to look at the industry as a sort of worldwide adolescent going through multinational





Whatever fate has in store for the N64, its joypad will go down as a '90s design classic



and games are aimed at children. This is a challenge that Nintendo will face throughout the rest of 1998 and well into 1999.

Competitive analysis:



Zelda (top) and Rare's *Perfect Dark* (above) are just the kind of games Nintendo will need to bolster its console's fortunes as more powerful formats arrive

Despite an increase in thirdparty titles in 1998, Nintendo has suffered against Sony this year, largely because the company has failed to ship the kind of seminal firstparty titles gamers have come to expect. A danger in Nintendo's 'quality, not quantity' strategy is that without big firstparty titles, gamers look elsewhere. Chairman **Howard Lincoln** acknowledged that at E3 this year, but contended that Zelda, scheduled to ship in November, would have the same kind of invigorating effect on Nintendo that a major hit movie has on a studio in the doldrums. He's right, but the opposite is true as well: if Nintendo fails to deliver Zelda on time, or if Perfect Dark slips, both gamers and developers could quickly lose interest in the system.

The company line:

Nintendo absolutely cannot afford another Christmas season without a real killer title. But will *Zelda* slip again? Lincoln says: 'I'm quite confident that we're not going to have any delay problems with *Zelda*. I mean, Mr Miyamoto knows and we all know that [*Zelda*] is a critical title and it's a critical date for release, November 23 [three days after the official launch of Dreamcast, incidentally]. I have a high degree of confidence that it's going to ship on time.' And what about thirdparty software? 'I think it's getting better, particularly in the sports arena, the kind of quality of football games that Acclaim, EA, and Midway are bringing out, I think that's positive. I think there is some other thirdparty software that looks really outstanding too, for example *Turok 2*. So I think that it is improving overall and that there is some exceptional thirdparty software that will help us in the back half of 1998.'







Jet Force Gemini, *Body Harvest* and *Turok 2* are all likely to be both critical and commercial successes on the N64

Future prognosis:

The N64 is in an interesting position. Technologically, there is a lot more that can be done with the system. If Nintendo and Rare can continue to deliver high-quality games, Nintendo's marketing should keep gamers loyal to the system, providing a ready market for thirdparties well into 1999 and beyond. Nintendo did not rush to enter the last next generation battle, and despite its 64bit machine's failure in Japan, **Edge** doesn't expect it to this time either. With two major unannounced games, *Metroid 64* and *Mario 2*, supported by two Rare games, the company could easily keep N64 active beyond 1999. If, however, Nintendo fails to deliver major games, loyalty to the system could shrivel quickly. There is only so long even the most patient fans will wait, and Nintendo's dismal on-time record doesn't exactly inspire confidence. The company knows what it has to do. Whether or not it can do it is another question.

Bottom line:

Support for the Nintendo 64 is a mile wide and an inch deep. If any major titles slip, it could spell an early doom for the system. Thirdparty support will largely depend on Nintendo's ability to keep gamers excited about the system. If all goes well, Nintendo will be able to introduce a new system on its own schedule early in the next decade. If not, well, there's always the continuing Game Boy phenomenon. ▶



moodswings. Indeed, when console owners talk of the transition from NES/Master System to SNES/Mega Drive, and from SNES/ Mega Drive to PlayStation/Saturn, they tend to leave out little details like the rise of the PC as a healthy gaming platform, the 16bit home computers, and cult machines like the Neo Geo, FM Towns Marty and PC Engine. There have always been machines around to fill in the gaps between the major players.

In any case, reports of the death of consoles have often been greatly exaggerated. When people talk about decline and 'failure' of the NES in the late-'80s, they often neglect to mention it found its way into 60 million homes worldwide. Likewise, the Mega Drive and SNES were still supported by new software well into the mid-'90s (specifically the latter, with *Donkey Kong Country 2&3*, *Yoshi's Island*, etc). And, importantly, the PlayStation has still yet to find its way into as many UK homes as Sega's 16bit machine did. What's more, it's possible to pick up a SNES Mario All Stars Pack in branches of Dixons on the High Street today. Consoles have a habit of hanging on in there.

Furthermore, when looking at the two major videogame console slumps of 1983 and 1995, it is clear they weren't actually precipitated by the arrival of new technology. The NES did not kill off the Atari 2600 – Atari managed that itself by refusing to instigate any software quality control and by ignoring the potentially lucrative 'mature gamer' market. And did the PlayStation really kill off the 3DO, Jaguar and CDi, or were they in fact done to death by universally unimpressed consumers?

However, this is a genuinely interesting time for the industry. It is accurate to say that ▶

PLAYSTATION

◀ The higher they climb, the harder they fall – and Sony could drop from the heavens. How long for PlayStation?



The story so far:

Sony's first attempt to get into the game business was in the 1980s, when the company fielded a succession of MSX-standard home computers. After the failure in the West of the proposed standard, Sony tried again, and the result was the infamous SNES CD-ROM 'partnership' with Nintendo that collapsed just one day after it was announced during the Summer 1991 Consumer Electronics Show. Sony refused to quit, and the third try produced the PlayStation. The 3D gamebox, designed by Ken Kutaragi (whose previous accomplishments included the SNES's sound chip), was elegant, powerful, and easy to program thanks to a clean internal architecture and comprehensive graphics libraries. Launched in Japan on December 3, 1994, and in the UK on September 29, 1995, the PlayStation quickly grabbed the number one spot among consoles, and it has yet to budge. The spot-on marketing of the machine, together with some excellent games, gave it an instant 'cool' cachet that it has yet to lose. The PlayStation and its related products now make up a significant portion of Sony's annual revenue.



PlayStation: So long and thanks for the memories?

Hardware:

As powerful as the hardware was at release – delivering 3D performance at levels beyond the reach of computers 20 times its £299 cost – PlayStation's specs seem almost quaint today: 300,000 polygons per second, a 30MIPS processor, 2Mb RAM, and 1Mb VRAM. Still, many of the features PlayStation pioneered, like removable memory cards, are now standard, and hardware innovation at the accessory level continues, with the Dual Shock controller and monochrome screen memory card PDA leading the way. It's a testament to the quality and foresight of the design that four years after the specs were hammered out, top-quality coin-ops such as *Tekken 3* can still be successfully converted to the system. However, there is simply no denying that PlayStation is starting to show its age. While developers continue to squeeze everything they can from the system, there is just not enough texture memory or RAM to make games that can compete with even mediocre efforts on PC.



Software:

There's certainly enough software available for the PlayStation – more than 400 titles at the last count – but quality has always been an issue. Software has constantly improved technologically, but the ratio of triple-A games to also-rans has remained consistently paltry. As the most popular console, the PlayStation is the lowest common denominator for many developers, and popular genres like racing and thirdperson action are immensely overcrowded. The size of the market, however, also ensures that the PlayStation is the prime location for experimental titles such as *Pet in TV* and *PaRappa the Rapper*. Although technological quality has improved with each generation of software, there are signs that this is changing: games like *Spyro the Dragon* are revealing the limited number of polygons available to developers. Also, this year's E3, unlike last year's, featured few games that look as if they will be a significant leap beyond what is available today. **Edge** expects to see the high-quality routines from games like *Gran Turismo* filter down to lesser developers, and gameplay and design advances should continue. But even with assembly programming, there doesn't seem to be a lot more left for the PlayStation to give.



The Sony controller is looking its age. Analogue is now a must

Marketing:

On the marketing side, however, SCE is nowhere near finished. Despite a nearly 10 per cent penetration in UK homes, the company, which is close to dominating the traditional target

◀ the PlayStation is still incredibly strong, and it's true to say this is perhaps the first time in videogame history that a new generation has interrupted the healthy years of its predecessors.

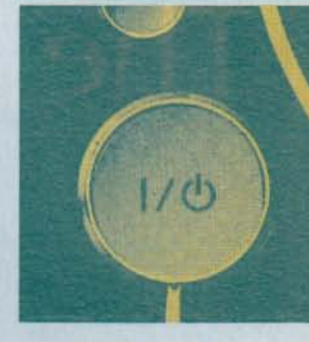
But it is not only a huge user base that will save Sony's machine. It is the fact that Dreamcast and Project X don't offer anything drastically new. Although Project X utilises a one-chip solution, with no dedicated polygon-handling support, it's clear the manufacturer's aim, like Sega's, is to produce visually convincing 3D worlds. The PlayStation heralded a new era for the videogame console: the era of the true 3D environment, and of the cheap, powerful storage medium. Dreamcast and Project X are essentially building on, rather than replacing this era.

In some respects, though, the free development environment of Project X could encourage the true revolution that many experts are forecasting, a revolution where polygons are quashed by the flexibility of NURBs-based systems, for example. The current experimentation with new non-poly graphics engines on the PC will also mean that Dreamcast owners could find themselves exploring worlds that cannot be built within the confines of a PlayStation or N64 – both dedicated polygon-pushing engines.

Whatever happens in 1999 – and it's destined to be an action-packed year, with some considerable casualties – the ultimate winner of the next round of console wars will not be Sega or Sony or any multinational electronics company, it will be the average bloke on the street, who will benefit from the freedom of choice. Monopolistic practices are unhealthy; here's to a healthy run up to the millenium.

audience (adolescent boys), has only begun to fight. Sony's marketing, on the whole, has always been excellent, with print, TV, and point-of-sale material addressing videogame players and creating wider kudos for the machine. When the PlayStation launched, that target was 17- to 24-year-old men. Today that age range is significantly lower, and the company is starting to reach out to the Holy Grail of the game industry – women. It has the software to do it – games like *PaRappa* and *Spyro* are well-received by most women, and if it can succeed with this group, the console's lifespan should be considerably lengthened. With both software and hardware (the PDA), Sony is making a legitimate and successful attempt to expand its market.







Is it time for Sony to power-down its super-successful machine?

Competitive analysis:

The harsh reality is that if there are multiple versions of a game, particularly if one is on an accelerated PC, the PlayStation version tends to look the worst. PlayStation-exclusive games, designed around the system's foibles, look better, but they still feature swimming, grainy textures. The PlayStation's main advantages today are that it's cheap, it has well-designed and well-integrated components, and some of its exclusive titles, *Gran Turismo* for one, are among the best games around. And the other main advantage? The global installed userbase of 30 million units, making it – limitations or not – the first choice for most developers.



The company line:

Sony's motto at E3 was 'PlayStation Forever', but is this a realistic statement? **Phil Harrison**, VP of R&D and thirdparty relations, certainly believes so: 'Generational cycles in game hardware are self-fulfilling prophecies, which the industry brings upon itself. In the past developers have been forced to abandon existing systems for the promise of new technology and business models because the current formats were dying a horrible death. This is not going to happen to the PlayStation for very good reasons – we planned the format from day one to be future-proof.' But what about the games? Can Sony compete without the best hardware? 'Since the day *Ridge Racer* shipped, the naysayers have claimed we've hit the maximum performance of the PlayStation. They said it again with *Tekken*, again with *F1*, and so on. But every time, something new and more exciting has come along, which shows even greater performance on PlayStation. This is a unique situation for the industry to be in. With 16bit, towards the end of its life, developers used bigger and more expensive carts, which delivered only the most marginal increase in quality, so the perceived value to the gamer went down. With the PlayStation, though, the CDs always cost the same, and in fact, as the installed base grows, costs go down. The PlayStation format is the first to deliver decreasing software prices and increasing quality. That's a much better long-term value for the gamer.' Harrison even goes as far as to assert that the PlayStation will still be retailing ten years from now. The question is, will developers be backing the machine in 2008? 'I'll say this: The PlayStation is only available in the US, Japan, and Europe. We're just getting into Asia while China and South America remain untapped. They also represent some of the fastest-growing consumer economies in the world. I think it's very likely we'll see development for years to come.'

Future prognosis:

In the same way the SNES is still available, **Edge** expects the PlayStation to be around, if not forever, then for at least the next few years. The real question is this: How much longer will truly great software be produced on the machine? No matter how large the installed base is, at a certain point the best teams will want to move on to bigger and better things, and the best games will go, too. Specialty publishers like THQ will stay around a while longer, but the machine will become irrelevant to hardcore gamers long before the last game is released. At last year's E3, ambitious titles like *Metal Gear Solid* were shown even though they would not be delivered for more than 12 months. That was not the case this year, leaving **Edge** pondering just how many top development teams will be taking on more than another one or two PlayStation projects once the Christmas boom-period passes.







Could *Gran Turismo* and *Tekken 3* have marked the highwater for the PlayStation? And will *Metal Gear Solid* be the last truly revolutionary game the platform will see?

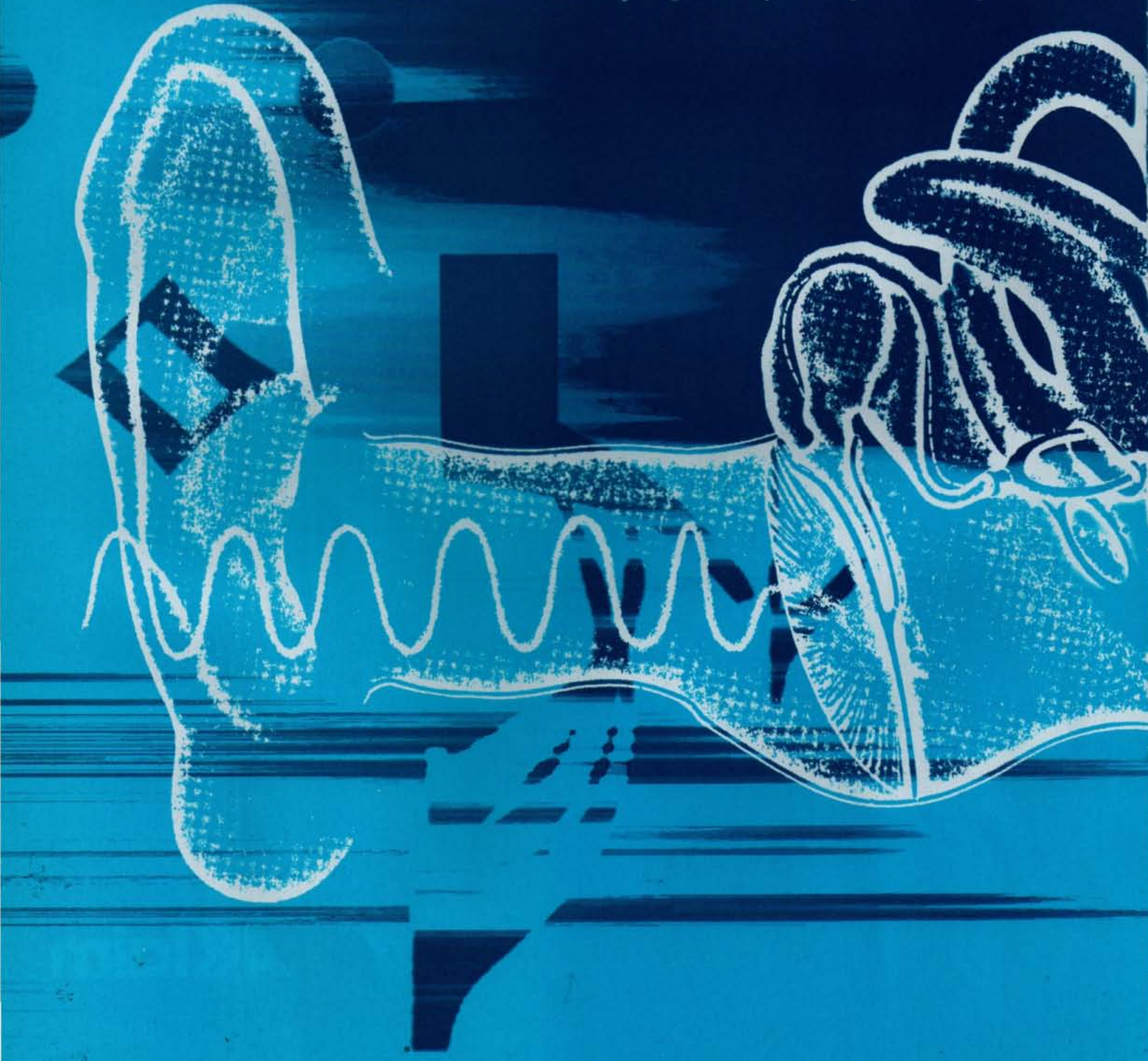
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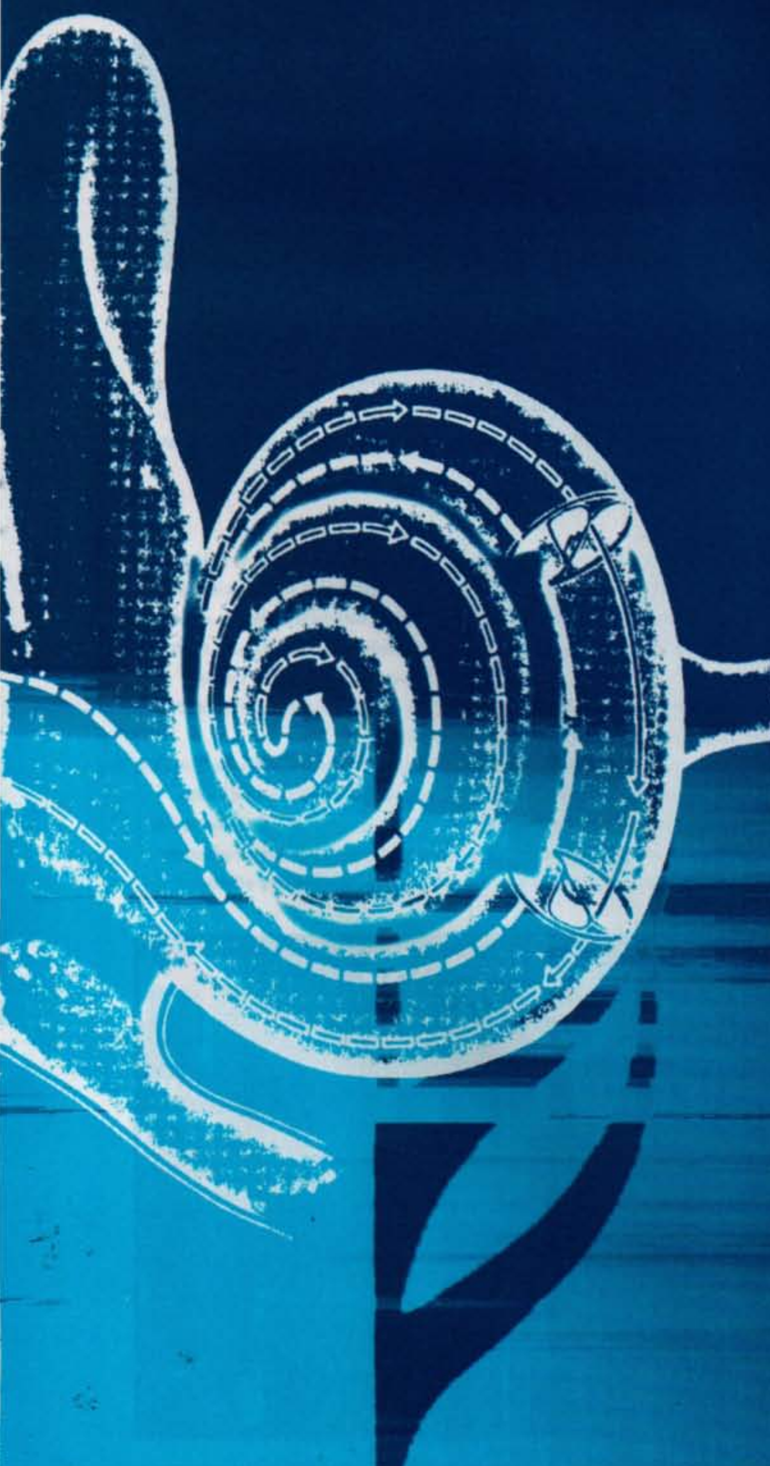
The PlayStation has a huge installed base and proven thirdparty momentum, not to mention a marketing team devoted to broadening its appeal. The system isn't going anywhere astonishing technologically, and it is hard to envision software continuing to improve much past this Christmas. **Edge** expects 1999 will witness PlayStation fever finally beginning to fade.



The art of noise

Once the least important components of a videogame, music and sound effects have come on leaps and bounds in recent years. Now, new technologies like DirectMusic, 3D Surround Sound and Yamaha's Dreamcast chip might finally make gamers sit up and listen...





While even the first coin-op designers understood the importance of audio – using sound as much as anything to entice punters – it's an aspect of videogame design that, until recently, has always played second fiddle to the onscreen action. Early home computers often ignored the issue altogether. While Commodore laid the groundwork for computer synthesis, the ZX Spectrum came fitted with nothing more than a piezoelectric transducer, which sent pulses direct to a little buzzer. There was no sound chip.

As the PC rose to prominence in the early '90s, Creative Labs did much to establish a workable standard on an infuriatingly open-ended machine. Faced with programming direct to slot-in soundcards through DOS, the ability to write for SoundBlaster formats made MIDI and digital sound playback a far simpler process. And knowing what base-level spec to target proved crucial when composing music and effects.

And then came the CD-ROM, facilitating the biggest change in computer game audio to date. It immediately became possible to provide music every bit as good as commercially available tracks, spooling audio CD tracks (known as Red Book) direct from the disc. Indeed, there have been numerous instances where established artists have contributed to a game soundtrack, most famously in *Wipeout* which used tracks provided by acts such as the Chemical Brothers.

The attraction with using CD to provide game music is obvious. Why bother working within the limitations of an audio standard, vying for processing time which will mostly be given over to a game's core code and graphics engine, when you can simply compose a linear track, burn it, then play back from the CD while the pre-loaded game goes about its business? It's contributed to the way game audio is given more attention; gamers are more willing to play with good quality equipment, and publishers are more willing to purchase professional recording equipment.

Logical progression

It's a trend that can be seen on both the PC and the PlayStation. But while games for Sony's machine have tended to focus more on CD audio, that's by no means all the console is capable of. 'I believe there's still much to be done with the machine,' agrees **Colin Anderson** at DMA Design. 'One thing that hasn't really been explored is CDX-A, which gives us the ability to interleave audio tracks on the CD, allowing us to stream more than one at a time.'

Soon to be used in titles such as *Psybadeck*, CDX-A makes it possible to cram eight channels of near-Red-Book quality (37KHz rather than 44KHz) tracks in the same space as on regular CD audio. As ex-Psygnosis musician **Tim Wright** (aka Cold Storage) points out, its uses aren't limited to music playback. 'It means you can do things like have speech in games, with eight different language versions on the CD.'

The PlayStation also supports wavetable sounds and is able to emulate MIDI if provided with the samples. And while there are some memory limitations, the 512K of space is compressed using a form of ADPCM to give 2Mb – comparable to an average PC soundcard. 'The PlayStation isn't very flexible, though,' points out Anderson. 'For instance, if you're looping samples they've got to be on 28byte boundaries [because of the compression used]. And some of Sony's developer tools leave a bit to be desired...'

Ground level

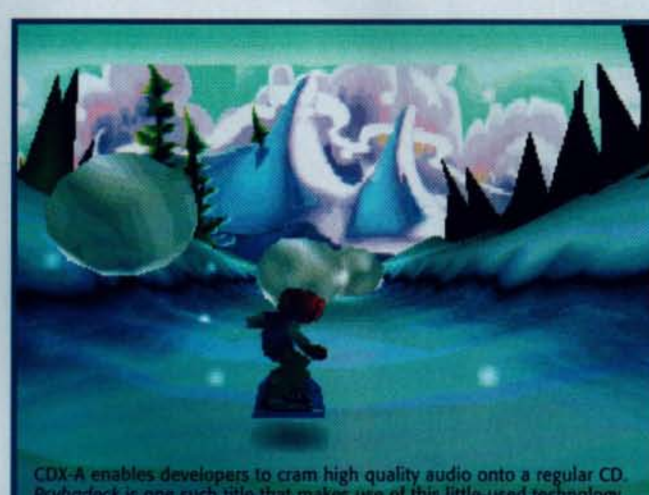
But while working on the PlayStation can prove challenging it's a far cry from the problems facing those working on Nintendo's machine. Whereas the PlayStation automatically provides 24 channels, with the CD to fall back on if necessary, the N64 divides processing time between sound and graphics. Naturally it's the latter that gets preferential treatment.

The N64's approach does mean that there's no set channel limit and ADPCM keeps memory problems to a minimum, but to play a single channel of wavetable sound takes around one per cent of processing power, and it's rare for a game to use more than 16. As Anderson asserts, 'Those channels are soon taken up. A minimum of 12 for music is needed to get good results, which only leaves four for sound effects.'

The way to work around this is to use audio programmers to create code ▶

that prioritises the sounds fed to the player, something becomes even more crucial when you consider key sounds are usually needed when there are the maximum number of polygons onscreen. 'It's knowing when to play something and when not to,' says Anderson. 'Yet there are a lot of developers who still don't pay much attention to that sort of thing, and just play an event-based sample whatever.'

And then there's Dreamcast, which promises to push audio further than any console before. Using Yamaha's RISC-based ARM7 chip, it will be capable of 64 channel playback, with ADPCM compression on 2Mb of RAM effectively giving an impressive 8Mb of sound memory. 'It's going to be as good as a high-end PC card from Creative Labs or Turtle Beach,' reckons **Richard Jacques**, sound producer at Sega UK.



CDX-A enables developers to cram high quality audio onto a regular CD. *Psybadeck* is one such title that makes use of this little-used technology

Surprisingly, 3D sound isn't a feature of the chip, though Yamaha's drivers will include support for both Q Sound and Dolby Surround. And although it won't have an in-built GM soundset, games can load one into memory as needed. But the real possibilities lie with the ability to treat the digital samples in realtime using hardware-based filtering. In the past it's been necessary to either pre-treat sounds or use processor-intensive code to apply simple filters to digital sound. 'It'll be great for dance music,' says Jacques, 'and for creating distance-based effects, like when a car gets closer and then drives away.'

Okay computer

But it's on the PC that the greatest changes are taking place, going far beyond the efficiency issue of switching from ISA to PCI-based soundcards. Until three years ago, most soundcards relied on FM synthesis to generate General MIDI-compatible sounds, a solution that produced results far inferior to those on professional keyboards. The solution was to switch over to wavetable synthesis, where the soundbanks of pre-recorded instrument samples are used, with simple parameters controlling modifiable elements such as attack and decay. Although the results are far superior, playback of tracks using MIDI has fallen out of favour. For while the GM standard theoretically means a track should sound the same irrespective of the soundcard, the reality is very different. Some card manufacturers still use FM synthesis for some MIDI instrument sounds, and even wavetable sample quality varies greatly.

As a result, recent games have tended to either cram as much of the game code as possible on to the hard drive (hence 2-400Mb installations are now commonplace) to free up the CD-ROM for Red Book playback, or simply store songs in MOD or WAV format, playing them back as entire samples, or looped passages. The latter is a space-consuming method but ensures the listener hears the music as the musician recorded it. And, while not modifiable in realtime like MIDI, it's possible to add a degree of context-sensitivity: move to a new location in a game or trigger an event and the code can simply switch to a different track. Ungainly, but effective.

Hardware-based digital filtering, as found on the Dreamcast unit, is now appearing on PC hardware, with Digital Signal Processor (DSP)-capable soundcards giving the option to add environmental effects in realtime. Along with filter-based techno soundtracks the striking ambience effects found in *Unreal* may soon be commonplace. 'In the past it's only been possible to play or stop a sample,' says Anderson. 'If you wanted to filter it, add reverb, delays or choruses you had to do it in software. And that hits the CPU.'

DirectX has helped make it easier for programmers to cater for such features without alienating owners of low-end cards. 'There's been so much technology out there, we couldn't hope to support it all. From a developer's



Developed for Sony, *Noisetoys* is a music composition tool that stores samples...

Noisetoys Of The Future

While there's undoubtedly more to be done with the PlayStation from a developer's point of view, ex-Psygnosis musician **Tim Wright** is currently working on a title that, for the very first time, will place the music in the hands of the user. Heading up the development team at Jester Interactive, he approached Sony with the idea of creating a music composition package.

'Their response was that if we'd asked them a few months earlier they would have said no, but now they're keen to broaden the market, hence *Parappa The Rapper* and *Spice World*,' explains Wright. The result is *Noisetoys*, a combined light synthesiser and music creation tool, with 16 channels provided for each.

'You have riffs or loops on the 16 channels, which can then be stacked up, building a track from those blocks,' says Wright. 'But what it also allows you to do is to go down and edit those riffs at an instrument level. The blocks aren't simple sample loops, they're built from component samples.'

Wright is also keen to ensure the casual PlayStation user gets results, hence a 'jam' mode where several people can use controllers to play and record sequences on the fly, then tidy up the session at a later date. A nightclub tour, where people take their memory cards along in the hope of winning prizes and getting their track played, is even planned. Given Sony's strong links with dance and youth culture in general, *Noisetoys* may well point the way forward for the PlayStation.

'There's been so much technology out there, we couldn't hope to support it all. From a developers point of view it often led to writing for the lowest common denominator'

Colin Anderson, DMA

point of view it often led to writing for the lowest common denominator,' says Anderson. Crucially, there may soon be a swing back towards MIDI, in part thanks to the features included in DirectMusic, now shipping as part of DirectX 6.0. 'We've come up with an API that offers the flexibility and file sizes of MIDI, but with the sort of playback people are looking for,' states **Kevin Bachus**, product manager for DirectX.

There are four key features that make this possible. At the heart of DirectMusic is an improved MIDI sequencer. 'In the past, MIDI playback may have speeded up or slowed down depending on what was happening on a system, but this should ensure it remains rock steady,' claims Bachus.

DirectMusic also brings support for downloadable sounds. 'DLS means musicians aren't constrained and will have a better idea of how something will sound,' says Bachus. Authored by the MIDI Manufacturer's Association, it enables musicians to download their own instrument sounds (or samples) into RAM, then call on these as they would an in-built GM set. It's similar to Creative Labs' soundfont system, which is now expected to converge with DLS. DLS, meanwhile, is moving to version 2, which includes more post-processing effects. Expect to see this implemented in later revisions of DirectX, along with better 3D algorithms and time-stamped buffers.

Complementing the DLS capability is Interactive Music Composition, giving MIDI playback modification on the fly. 'We've made it possible for people to change tempo, key and so on. The program tells DirectMusic that these things are happening in the game, and it re-sequences the music depending on the action.' In other words, it'll finally be possible to use tracks based around custom samples while making the most of the ever-flexible MIDI, which is still the standard used by most composers.

Finally, Microsoft has created a low-overhead software synthesiser for use with cards lacking wavetable-based MIDI, consuming just a tenth of a per cent of CPU power per voice on a Pentium II. 'It acts as a hardware emulation layer, playing tracks using the digital audio capabilities of a soundcard,' explains Bachus.

A Roland GM soundset will be included, ensuring normal MIDI playback quality is high. But the way this software-based option supports the other features of DirectMusic really impresses, making it possible to use the DLS and interactive music functions without worrying how the finished composition will play on various PC configurations. ▶



... in 16 channels which can then be edited to build up different riffs and loops

3D Sound Battle Ground

While Creative Labs can take much of the credit for standardising PC audio before Windows 95's arrival, the success story of the last two years is Aureal's two-speaker 3D sound. With its Environmental Audio Extensions format, Creative Labs will attempt to regain its crown, but Aureal's second generation code is also due for release in Autumn.

At the moment *Aureal 2.0* appears technically superior, delivering 3D sound using just two speakers, and featuring occlusion and reflection code to treat sound based on a game's 3D geometry. So, if a monster in a 3D game is behind a wall, for example, its growls will be muffled appropriately, changing as it turns the corner. The catch is that, while the chip will handle normal DirectX sound, programmers will have to write directly to the chip to take advantage of the extra tricks.

Aureal's **Bob Safir**: 'If you look at 3Dfx and Aureal, you can see a similarity in both the technology enhancement and the business model. We take 3D audio to a level beyond that of which a baseline PC can perform, just as 3Dfx does with graphics. We, like 3Dfx, have our own API which, in our case, expands upon the capabilities of DirectSound3D. 3Dfx makes a chip which its industry partners place on graphics cards for market consumption. Aureal does the same with audio cards.'

'Even 3Dfx felt historically that it didn't get the support it needed, and is now trying to get away from using a proprietary API,' counters Kevin Bachus at Microsoft. 'We talk with Aureal all the time to try to get them to work within our API – developers tell us they can't afford to develop for other standards.'

Creative's EAX, on the other hand, has been developed in conjunction with Microsoft, and will allow for some control of reverberation, damping and reflections, as well as general 3D positioning. It's targeted at users with four or more speakers. 'A lot of people have said you can do positional audio through two speakers, but that's limited by Head Related Transfer Function,' says **Franco de Bonis** at Creative Labs. 'If you keep your head perfectly still in the centre you'll have a majority of success getting 3D audio sound, but how many people stay completely motionless?'

And, although he confirms Creative may follow suit, he's sceptical about *Aureal 2.0*'s occlusion effects. 'In real life, what's it going to offer? A lot of people say you just can't hear that sort of thing.'

Aureal has gained much developer support, though whether in the long term it'll be willing to code for an API that goes beyond the DirectX standard remains to be seen...



SEGA DIGITAL STUDIO



Sega is investing heavily in recording equipment with a new £150,000 studio dedicated to Dreamcast games development

Changes

Other changes taking place on the various platforms have tended to focus on the possibilities of sound positioning. The idea behind these techniques is straightforward enough, assuming that because humans can perceive sound in three dimensions using just two ears, it's possible to record and simulate the 3D placement of sound using two or more speakers. After that it gets a little more complex. Q Sound and Dolby Surround were the first two solutions to make their mark. Dolby Surround can only be used with pre-encoded audio, and so is useful for the audio in prerendered video sequences or ingame music, rather than even-driven realtime sound. It works by sending a mono rear signal to the rear speakers together with stereo at the front (it doesn't really simulate height), though some Dolby compatible formats use a virtualisation system to simulate this effect using just two speakers. Q Sound can handle Dolby in this way, while tools also make it possible to pre-encode tracks specifically for two-speaker systems using Q Sound's own algorithms. The Q Mixer package also facilitates the realtime 3D placement of audio, making it possible to place gunfire, explosions and other event-based game sounds as they're needed.

While Q Sound can be a software or hardware-based solution (supporters include Yamaha, NEC, Psygnosis, Electronic Arts and IBM), its newest rival is purely chip-based. Aureal was formed just over two years ago, yet has already shipped a million units and gained support from most games publishers for its PC-based A3D system. Claiming superior results to Q Sound, it employs positioning algorithms developed at NASA to give sound height as well as depth and stereo placement. As with Q Sound, Head Related Transfer Functions was used to obtain the algorithms. **Bob Safir** at Aureal explains: 'An HRTF can be thought of as a set of two audio filters (one for each ear) that contains in it all the listening cues that are applied to a sound as it travels from the sound's origin, through the environment, and arrives at the listener's eardrums. These HRTF measurements, combined with other calculations including inter-aural time differences (ITD) and inter-aural intensity differences (IID), make up a unique set of algorithms which comprise A3D. Naturally, there is more to it than that, but I would be burned at the stake if I revealed all of our secrets!'

> Aureal was formed just over two years ago, yet has already shipped a million units and gained support from most games publishers for its PC-based A3D system



Aureal adds depth and enhanced stereo placement to *Unreal*'s evocative soundtrack

The Next Generation

One of the key hardware releases for the PC over the next few months will be Creative Labs' SB Live!. Expected to cost around £200, it uses the newly developed EMU10K1 chip to deliver EAX-based audio.

'It's a very powerful but generic DSP with the power of a P166 CPU' explains Creative's Franco de Bonis. 'It's a signal processor, and can handle realtime sample rate conversion, but really it's not designed to provide set features. Instead, it's a question of programming it to do what we want, so that further down the line we'll be able to include Dolby Digital, and also create a patch to handle occlusion.'



Speakers such as this pair from Sony are essential to benefit from Dolby Digital

> If Sega's Dreamcast is any indication of things to come, the next wave of consoles will mirror the advances being made in wavetable sound, and digital processing

It's a system that many view as the best around. 'Q Sound still has a lot of people supporting the technology, but Aureal really seems to be coming through,' opines DMA's Colin Anderson. 'Listening with my own ears, Q Sound doesn't come close to Aureal.'

It's with A3D 2.0 that Aureal really aims to leap ahead of its competitors, adding groundbreaking wavetracing features, though Creative Labs is also ready to launch a comparable API known as Environmental Audio Extensions. It's also worth noting that Dolby still has much to offer the PC gamer, with the introduction of Dolby Digital (previously known as AC3), which has finally filtered down from the cinema to television to the gamer. Like Dolby Surround it's suitable for pre-encoded files rather than realtime positioning, but features a stereo rear signal. With decoder-equipped DVD players taking hold and the likes of Psygnosis and Lionhead pledging support, Dolby Digital may well take the place of regular CD audio streaming.

'DVD enables us to have nine alternative channels – that's nine lots of Dolby Digital,' explains Dolby's **Rik Ede**. 'You can flip between these seamlessly, jump to different points in the streams, and interleave them in a similar way to the CDX-A capabilities on the PlayStation.' And all without taking up any extra space. In fact, Dolby's compression squeezes those nine tracks into a smaller space than a single regular audio recording. Of course the format does rely on the user owning at least five speakers – front centre, left and right, plus rear left and right, with an optional subwoofer – which is where Dolby, along with Creative Labs and other advocates of true rather than virtualised sound position, will have a fight on their hands.

Footloose

It's clear that a huge shift is taking place, with both gamers and the development community driving the current technological changes. On the PC ever more powerful CPUs and Microsoft's attempts to smooth out potential compatibility problems are making it easier than ever to provide truly immersive game soundtracks. And even in the cost-conscious world of the console it's clear that there's still work to be done. And if Sega's Dreamcast is any indication of things to come, the next wave of consoles will mirror the advances being made in wavetable sound and digital processing.

But while the hardware is reducing the gap in quality between pre-recorded music and realtime generated tracks, the linear-versus-interactive music debate continues. ▶

Jukebox Jury

Edge selects ten top audio-enhanced classics

1. Impossible Mission, US Gold (C64)
Providing the home computer user with a taste of sampling, few veterans will forget the voice cackling, 'Stay awhile, stay forever!'



2. Monkey Island 2: Le Chuck's Revenge, LucasArts (PC)
With this seminal title LucasArts introduced its context-sensitive MIDI-based music playback system, known as iMuse.



3. Wipeout, Psygnosis (PlayStation)
The game that kicked off the techno-to-videogame trend, with tracks from dance music's biggest names spooling off the CD.



4. Super Mario 64, Nintendo (N64)
For proving that a console without a CD could still hack it. The subtly context-sensitive ditties are as delightful as the game itself.



5. NHL '98, Electronic Arts (PC, PlayStation)
Pushing EA's commentary system even further, *NHL* uses thousands of word and phrase samples to stitch together its near-seamless voiceover.



6. GTA, DMA Design (PC, PlayStation)
Using the car theme as an excuse to pack in a whole bunch of radio transmissions, the jingles and inspired musical snippets would do the Top 40 proud.



7. Blade Runner, Westwood (PC)
Most took notice of the glorious 3D Studio renders, but the wealth of background effects worked just as hard to evoke the feel of Ridley Scott's masterpiece.



8. Parappa the Rapper, Sony (PlayStation)
Interactive audio at its most extreme, an appreciation of Mr Onion Head's tones is integral to playing this innovative game.



9. Gran Turismo, Sony (PlayStation)
Proving that there's more to racing game audio than a rock soundtrack and whining engine noise, *Gran Turismo* makes excellent use of real car samples.



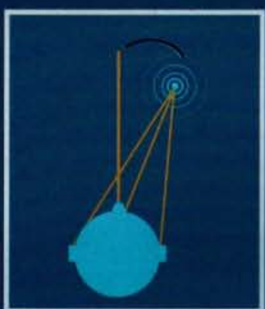
10. Unreal, Epic Megagames (PC)
Support for Aureal 3D and software-driven filtering ensure every location comes complete with added sonic ambience, with a location-driven music score to boot.



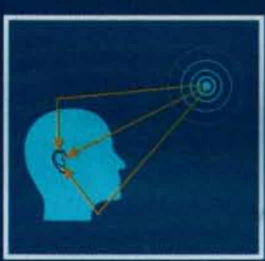
Now Hear This

These illustrations show how human beings perceive sound in three dimensions...

The delay between sound received by each ear (inter-aural time delay) is used to calculate the direction a sound is coming from



The position of head, ears and even shoulders affect the path taken by the sound to each ear



The way sound reflects in the surroundings also affects the perception of sound distance. Without it a loud sound could be distant or near, for example



Tim Wright is one person who doesn't think CD audio's number is up just yet. 'If you think interactive music is going to help then put it in, but don't put it in for the sake of it. Driving games don't benefit from it at all, for instance. And even in a game like *Quake*, you're sneaking around corners, and so just want spooky background music to create tension. You simply don't need interactive music because when all hell is breaking loose the audio is already drowning in explosions, gunshots and people screaming.'

Tim Wright, musician

> 'In *Quake* you simply don't need interactive music, because when all hell is breaking loose the audio is already drowning in explosions, gunshots and people screaming'



Widely debated, interactive music is deemed unnecessary in games like *Quake*

Wright believes that part of the problem is because of the parallels drawn with movie industry audio. 'In the cinema the music and sound effects obviously enhance what you're watching. It's clearly context-sensitive there. But in a computer game you don't follow a fixed path, you go down the same areas time and time again, so interactive music would just repeat.'

He cites LucasArts' *Star Wars* titles as a prime example. 'Every time a bad guy appears that same bit of music is played. But while it's good in that it lets you know what's happening, it's pretty tedious from a musical point of view.'

There's also the fact that the musician has to work far harder for games where the soundtrack is context-sensitive. Rather than simply compose a single track it's necessary to cater for every event, splicing passages in various combinations, and specifying other possible changes. 'Musicians are quite precious about their music, and if you're told to compose 40 tracks that'll be chopped and changed, you're going to lose some control,' argues Wright.

James Hannigan, a freelancer who works for both the movie and videogame industries (his credits include the current space adventure 'Lost in Space' and *Privateer 2*), disagrees. 'Game music has to be scored scene by scene and event by event if it's going to work. The idea of playing a pre-recorded track throughout a game is just silly, it removes all the drama. You need pauses as much as the music itself, and links to the gameplay.'

'I don't think interactive music is applicable to every game,' adds Sega's Richard Jacques. 'I think it'll be a 50:50 split on Dreamcast. CD audio is great for massive orchestral scores, for instance, which you can't really do very well on a chip as there just aren't enough channels.'

Hannigan believes that the pursuit of interactive audio will ultimately enable videogame audio to become a unique artform. Until then the results will always be compared to every other musical industry. 'It's similar to the move from 2D to 3D graphics. Previously game graphics mirrored other forms. They didn't offer anything new, whereas 3D graphics create images indigenous to the game industry. I still think we're some way off from seriously exploiting interactive music in games, and finding a unique technology for game music that distinguishes it from everything else.'

The inevitable race to come up with the technology, the sounds, the software and the talent capable of re-inventing computer audio is just beginning.



Psygnosis' forthcoming *Lander* will make use of DVD for ingame music playback

TESTSCREEN

The definitive monthly assessment of the world's latest videogames

Better late than never?

The process of repeatedly delaying a game's release does not necessarily indicate that the end result's quality is bound to suffer, although it's true that, more often than not, the mounting pressure placed upon developers by their publishers – as titles continually fail to meet release dates – results in a depressing amount of delayed games being released before the proper remedial action has been taken.

Take *Mission: Impossible*, for example (see p90). Months into development, as it neared its absurdly over-ambitious original Autumn 1997 release date, Rare's *GoldenEye* made a notable appearance on retailers' shelves. No doubt perturbed by the quality of Rare's masterpiece and disillusioned with *Mission: Impossible*'s slow progress, Infogrames transferred its development from the US to one of its internal French teams. The latter was given the monumental task of taking a half-finished product and shaping it into some kind of game within a limited amount of time.

Rumours suggest that such was the state of the original code, that most of it ended up being rewritten by the new team and a lot of the more ambitious concepts had to be dropped due to a lack of time or unrealistic goals. The end result is a sad waste of a videogame with big potential, likely to disappoint anyone prepared to invest their cash in this sub-standard polygonal tragedy.

Conversely, proof that a long development period and a series of delays does not necessarily end in disaster can be found just over the page. *F-Zero X* may be a lazy sequel in some respects but it is a highly competent racing game and a worthy 64bit interpretation of its SNES predecessor. Nintendo has a reputation for delaying its major titles if doubts remain over their quality in the run up to the proposed release date (indeed, the Japanese videogames giant went as far as delaying the launch of its 64bit system because *Super Mario 64* wasn't quite finished, and *Zelda* is a current case in point). Quality is rarely compromised in favour of commercial rewards, because Nintendo realises the importance of strong software – ultimately the calibre of a game is often reflected in its sales.

Of course, the irony is that the *Mission: Impossible* license will undoubtedly generate some income for Infogrames. But **Edge** wonders how many more sales the game would have enjoyed had it spent a few more months in development and emerged a far better product. A good game hiding behind a strong license is a rare occurrence, but a year after its release, *GoldenEye* is still making its developer a bob or two.

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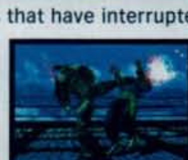
While *F-Zero X* emerges all the better from its extended development period, *Mission: Impossible* (centre) could have benefited from a little more time. Hopefully, *Zelda* (right) will be worth the wait

Videogames on the Edge

The favoured games that have interrupted the business of making **Edge** this month



1080° Snowboarding (Nintendo)
Given this year's apparent absence of Summer in the UK, **Edge** takes to the slopes with Nintendo's commendable Australian PAL conversion.



Tekken 3 (Namco)
The office King of the Iron Fist Tournament remains undecided as **Edge** revisits Namco's superlative fighting extravaganza. A lesson in playability.



FFVIII (demo) (SquareSoft)
Offering an hour's gaming, this demo alone will prompt many keen gamers to buy *Brave Fencer Musashida*. Especially those fluent in Japanese.



F-Zero X (Nintendo)
The oneplayer mode may be a bit light when set against the *Gran Turismos* of the videogame world, but the multiplayer option is one of the best around.

F-ZERO X



Get ready to rumble: The *F-Zero* update is quite simply the fastest racing game ever made. It also makes use of Nintendo's innovative Rumble Pack add-on better than almost every other Nintendo 64 game on the market

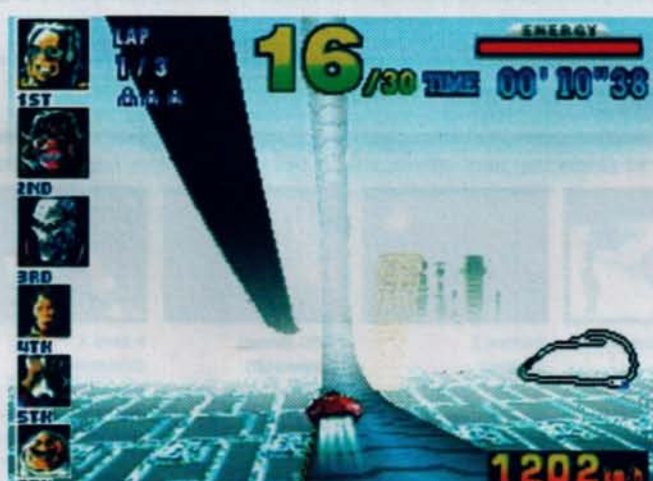


The game's presentation is up to Nintendo's high standards. It never feels like the player has to flick through multiple unnecessary screens before joining the action

Razor-edged, lightning fast and gilded with subtle touches of Japanese style, the pure bred racer *F-Zero X* has arrived. The perceived lack of a serious racing game has been a major burden on the Nintendo 64's image, serving to reinforce its growing stereotype as a 'kids' machine. Otaku know that *Wave Race 64* has much to offer, yet it's curiously discounted by the mainstream. By re-animating the classic Mode 7 *F-Zero* exponent (one of the SNES's launch titles – see p97); NCL has plugged the gap – in fine style.

Eschewing the usual menu of driving generic sports cars around nondescript circuits, *F-Zero X* delivers a searing spiral of ultra-fast hover ships clinging magnetically to 1,500km/h tracks. Nintendo's latest creation is an unabashed update of its predecessor, and is painted with the same lurid palette. Tokyo's neon-wrapped city blocks have clearly been a major influence on the game's artists: it looks fantastic, particularly when compared to the aforementioned dreary racers.

But the game's big calling card is that it sacrifices having complex background scenery in order to maintain maximum speed at 60 frames per second (a figure which will obviously drop to 50 upon PAL release). The other by-product is that the number of craft onscreen can be pushed far higher than in other titles. *Gran Turismo*'s six-up races suddenly seem slightly sparse compared to the 30 ships that *F-Zero X* can manage. And although the number of polygons available for each ship isn't particularly high (**Edge** reckons around 50 are used for each), Nintendo's designers have imbued them with a distinct style.



By either hitting a ramp, or judicious use of the boost button, the ships can be lifted off the track and up to incredible speeds of over 1,500km/h

Format: **Nintendo 64**

Publisher: **Nintendo**

Developer: **In-house**

Price: **¥5,800 (£30)**

Release: **Out now (Japan)**

[Game supplied by Department1 contact 0171 916 8440]



The tracks arc majestically through the air, although they can prove a little samey and lacking in sharp corners








Players must battle through the packed races to gain premier place. By double-tapping the bank buttons, it's possible to slam into opponents

The game has three difficulty settings – novice, standard and expert – and battling through the pack on the upper levels can prove surprisingly tricky. In line with its purist roots, *F-Zero X* doesn't try to hide behind a plethora of powerups, weapons and add-ons. However, it is possible to take side-swipes at opposing ships by double tapping the R or Z buttons, which are also used to activate air brakes for tighter turning. Additionally, by holding down Z and double-tapping R the player can send their craft into a spinning attack capable of demolishing rivals. The aim of this aggression is to either slam opponents into the barriers hard enough to destroy them, or to push them over the edge on courses where the restraints have been removed. And, in addition to the game labelling the first, second and third placed contenders, the player's nearest competitor in the overall championship is marked 'Rival' so that attempts can be made to eliminate them. Successful attacks add energy to the ship's store, which can also be replenished at recharge zones placed around the courses.

Tricky tactics aside, *F-Zero X* manages to deliver an extremely slick racing experience. Zipping along the tracks requires a fair degree of concentration to prevent bouncing off the boundaries – never has a videogame racer moved so swiftly. As with Nintendo's other racing titles, *Wave Race 64* and *1080° Snowboarding*, the analogue stick and the action onscreen are perfectly related. As bends in the track tighten and the limit of magnetic attraction is reached, the player can feel the ship slipping away, helped in no small way by excellent support for the N64's Rumble Pack. Once the first of the three laps each race consists of is complete, an added boost can be activated with the ▶



Four-up and no speed drop. One day all games will be like this...





Although *F-Zero X* is a Japanese release, it's fairly easy to decipher the simple menus








Only by completing the Jack, Queen and King cups on standard setting can the Joker tracks be unlocked






While enemy AI isn't the most sophisticated around, the sheer number of ships on the track at any one time results in a pleasingly random feel to races

B button, launching the craft to even higher speeds (while depleting energy levels). The turbo effect can also be used at selected points to lift the craft off the track for exhilarating moments of 1,600km/h and above.

As ever, Nintendo has tried to include a wide variety of play modes, from time trials to championships (choose from Jack, Queen, King and the bonus Joker setting once the others have been completed on Standard). There's also a surprisingly diverting Death Race option, in which the player has to destroy all of the 30 opposing craft as quickly as possible. However, *F-Zero X*'s multiplayer mode is arguably king of them all, with up to four players competing at any one time – with no noticeable loss of speed. As with any good multiplayer option, it is capable of devouring hours at a frightening rate, and adds greatly to the game's long-term appeal.

So where's the catch? Well, *F-Zero X* suffers from the same fault that undermined both *Super Mario Kart 64* and *Yoshi's Story*, in that it relies too heavily on its forebear for inspiration. Happily, it doesn't suffer from the lacklustre gameplay of those two titles, which aped their SNES precursors' style but not content.

Comparisons with the *Wipeout* series seem slightly out of place, given that *F-Zero* was the inspiration for those games, too. However, it is clear that *Wipeout 64* will have a remarkably tough job in matching the pace set by Nintendo's latest.

F-Zero X marks a welcome return to form for NCL, although **Edge** would prefer to see a fresh roster of titles to partner *Wave Race 64* rather than rehashes of golden oldies. Nonetheless, it's a worthy update.

Edge rating:

Eight out of ten





Still screens cannot hope to convey the incredible speed at which *F-Zero X* runs. In amongst the jostling pack of ships with the track passing by at 60fps, the closest comparison point is perhaps *Daytona USA* in the arcade

POCKET FIGHTER



It's unlikely that many players will find the time to admire *Pocket Fighter*'s incredibly detailed backdrops, yet otaku will delight in spotting obscure visual references...









One of Felicia's 'special' moves after some frenetic combos, accompanied by another bizarre costume change

Format: **PlayStation**

Publisher: **Capcom**

Developer: **In-house**

Price: **¥5,800 (£30)**

Release: **Out now (Japan)**











***Pocket Fighter* demonstrates the creative license a 2D engine can offer – its eccentric assaults would be near-impossible for a 3D engine to achieve**

Despite its apparent simplicity, *Pocket Fighter* possesses a brand of accessible complexity that seems the sole preserve of Japanese development teams. So, while the casual, younger or usually non-*Street Fighter* playing gamer will appreciate Capcom's refined take on the 'kids' theme for its obviously tangible features, the enthusiast will revel in its wealth of secrets, scoring system and abundant subtleties.

As a common-or-garden beat 'em up, *Pocket Fighter* could best be described as 'Street Fighter Light', a 'low-fat' fighting game that, unlike *Tekken 3* or *Dead or Alive*, won't lend itself to obese move guides in mainstream PlayStation magazines. With three buttons giving access to punch, kick and 'special' moves, each characters' offensive repertoire has been reduced to accompany their decrease in physical stature. 'Signature' moves – such as Ryu's Dragon Punch, and Gouki's Teleport ability – remain, but the 'freestyle' combos so beloved of *Street Fighter* adepts are notably, though understandably, absent.

Pocket Fighter sessions are invariably exchanges of 'special' and 'super' attacks. This emphasis on the more outlandish aspects of the *Street Fighter* combat model is reflected by the addition of collectable power-ups. Gems, recognisably styled to tie-in with *Puzzle Fighter*, are ejected from combatants with successfully landed blows, or by hitting certain scenery sections. Once gathered, these gift the recipient with incrementally stronger attacks, and in particular contribute in making 'super' moves the almost obligatory means by which bouts are won.

While *Pocket Fighter*'s punch and kick buttons initiate familiar moves, its third attack key allows access to a stylised, eminently eccentric range of assaults. From Ryu hitting an opponent with a road sign, to Felicia donning a Mega Man costume, these esoteric 'novelty' moves increase in power in accordance with the length of button press. It goes without saying that a fighter is vulnerable during this process, and that its bearing on gameplay is strangely significant.

There are, of course, many other rules and quirks that make this meeting of Capcom's miniaturised pugilists far more than a visual reiteration of *Street Fighter* proper. The pleasing duality of its appeal, whereby urges for simple combat and completist-friendly complexity are satisfied, make it a unique and vibrant addition to the Capcom fold. Given *Pocket Fighter*'s distinctly cartoon-like, refreshingly silly approach, it's even possible that fickle, polygon-obsessed western gamers may *begin* to behold the depth beyond the bitmaps, so to speak, come its European release.

Edge rating:

Seven out of ten

MISSION: IMPOSSIBLE









Various levels' complexities (above) go some way to making up for the spartan nature of others. The overall impression, however, is one of disappointment



The general appearance of the game's characters reveals acceptable detail (above, top)







Players are guided through even relatively straightforward puzzles (such as using explosive chewing gum to create an escape route, shown in the above sequence)

This is easily one of the year's biggest disappointments. In spite of a tormented development period, showing typical warning signs that all was not well (the original US code was reassigned to one of Infogrames' European in-house teams to undergo major changes), **Edge** remained optimistic, hoping the title would retain some of the great potential it first showed when it appeared in **E**45, despite the fact that at the time the developer supplied the magazine with workstation-rendered screenshots, falsely claiming them to be actual in-game images.

Sadly, few of the early ambitious promises appear in the final version, and those that do appear do so in diluted form. The only thing remaining virtually unchanged is the plot. As in the film, players take on the role of Ethan Hunt, IMF's finest, who finds himself framed for treason. Pursued by the agency that once employed him, Ethan must battle against the odds to uncover the mole that has infiltrated his secret organisation, clearing his name in the process.

In an attempt to inject some cinematic feel into the game, Infogrames has included plenty of cut scenes with comprehensive operation briefings to carry the action along, and unfortunately this is the only time the game manages to successfully convey any sort of atmosphere resembling the 'Mission: Impossible' film or series. All the gadgets are present, from explosive chewing gum to infrared-detecting contact lenses, but the spirit is missing. Playing *Mission Impossible* is a tension-free affair, with players caring little about whether Hunt survives to set the record straight or not. And despite the espionage setting, there's little sense that stealth is required in order to complete the missions. Set off an alarm and most players will remain unperturbed as they wait for a guard to turn up before disposing of him casually. Unlike *GoldenEye*, panic is unlikely to ever set in.

One of *GoldenEye*'s strengths is the way it successfully captures the James





Several cut scenes help the transition from one impossible mission to the next









Format: **Nintendo 64**

Publisher: **Infogrames UK**

Developer: **Infogrames (Fr)**

Price: **$60 (£40)**

Release: **Out now (US)**

Sept (UK)

Some of the outdoor levels prove a little simplistic (above). Character animation can appear particularly rough (top right)



Not content with toying with several gameplay concepts already, Infogrames decided to introduce elements of platforming into the mix

Bond theme, dragging players into its utterly convincing world. It's not a question of viewpoint – *Tomb Raider* and the *Resident Evil* series demonstrated that thirdperson adventures can be highly immersive experiences – rather a subtle mixture of realism, intelligent level design, and above all, truly involving gameplay. All elements that *Mission: Impossible* lacks. The character animation is poor, and other than a few notable exceptions, the environments are barren and uninspiring, sporting a disappointing graphical quality, all held together by a struggling 3D engine.

However, *Mission: Impossible* does have some good features. The facility of adopting another character's identity using a face maker is interesting, even if the player is not free to choose whom to impersonate. Furthermore, the ability to jump and climb is welcome but it's difficult not to feel that the developer could have exploited it to a greater extent, making it an integral part of more missions. Again, the use of the third and firstperson perspectives (the latter useful for when using a weapon) could have been better implemented.

Unfortunately, any genuinely entertaining aspect of these features is rapidly destroyed by an atrocious control system. Furthermore, despite the open 3D nature of the levels, nearly all are entirely linear affairs, requiring players to accomplish their objectives in a particular order. There is precious little freedom to adopt a different strategy as the player's guided actions trigger a succession of events allowing successful completion of the task.

Last year, *GoldenEye* stunned the gaming world while changing its understandably cynical opinion of movie licensed games. Yet with this release, Infogrames turns the clock back to pre-1997. *Mission: Impossible* joins the endless ranks of previous deeply disheartening film licences. Even in its unfinished state, *Metal Gear Solid* is already frighteningly ahead of Infogrames' effort. This could, and should, have been so much more.

Edge rating:

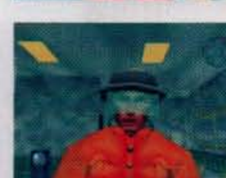
Four out of ten











One of the game's sequences illustrating Ethan Hunt's ability to change character so as to complete a mission undetected. Sadly, this feature is under-used

HARDWAR









Other craft fly using the same laws of physics as the player. It takes superior firepower and honed flying skills to gain the necessary advantage over them



The Moths are powered by solar energy, so these light wells prove invaluable when power is getting low during Titan's night cycle

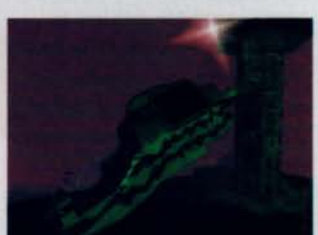
Hardwar is just one of many of this summer's releases to have suffered heavily from delays, but for once it's easy to understand why. For, not only have Gremlin and codeshop Software Refinery attempted to create a fully working game environment, populated by 'actors' with the same duties, sensibilities and abilities as the player, *Hardwar* also attempts to blend the open-ended game structure made famous by *Elite* with a strong narrative thread more commonly found in mission-based action games. It's a gamble that's paid off handsomely, imbuing the game with complexity and a sense of scale all too rarely found in PC titles.

The location is Titan, where a human populace has been stranded for several hundred years, eking out a living in several inter-connected craters, hoping to find a way off the inhospitable lump of rock. The adventure begins with the player in the role of either scavenger, trader or aggressor, specialising in scrap recovery, the trading of goods, or bounty hunting respectively. It's perfectly possible to become a jack of all trades once things get going, this initial choice simply influences starting location, and the specification of craft provided. Vehicles are known as Moths – a reference to their dependence on solar energy for power. It's not until the story unfolds that nuclear fusion reappears on Titan.

As ever, money provides the immediate key to success. Flying between structures, pilots can check out Police Wanted files, hunt the offenders down for a reward, buy stock and ship it over to a needy location. It's likely that most gamers will choose the more immediately gratifying bounty-hunting role, but until a better craft and a more impressive array of weaponry and defence systems can be bought, dogfights can be a very perilous business.

Throughout the crater areas there's also the heavy presence of two opposing factions – the Lazarus and Klamp-G corporations. With messages regularly relayed to the player via an onboard email system, it soon becomes clear that neither side is innocent in the story. The way the game drip-feeds the player with clues, snippets of info and a handful of major events is highly unusual, not to say compelling. Early on an alien ship begins to interfere with the player's control systems before exploding, leaving behind unidentified cargo which is then spirited away by Lazarus research craft. It's just the first of a chain of events that can be ignored if the money-making side of the





Explosions have a hand-painted quality that's at odds with the visual style elsewhere









Craters are linked by these tunnels, but there's no data catching or loading delays when transferring to another area



Other craft spice up the singleplayer mode, though a deathmatch-style network and Internet game is available for more instant gratification

Format: **PC**

Publisher: **Gremlin Interactive**

Developer: **Software Refinery**

Price: **£40**

Release: **Out now**







As with every other 3D accelerated title around, lighting effects abound (above). The lensing isn't especially subtle, though the roving spotlights are effective

game appeals more, but which is more than likely to prove far too tempting.

While *Hardwar* is firmly rooted in sci-fi, right down to the environments recalling the curious building shapes and aquatic murk of Chris Foss book covers, there's a pleasing subtlety to controlling the Moths that betrays Software Refinery's past experience with flight sims. Bizarrely, it's possible to affect the flight model by upgrading the craft. Ship enhancements are dubbed 'software', and can be fitted and upgraded to provide a smoother ride, as well as better radar, navigation equipment, and other HUD improvements.

With curious architecture, colour schemes that get weirder as day and night cycles take place, and a unique gracefulness of movement, *Hardwar* has an almost serene kind of atmosphere. It looks and feels unique, with the music from techno record label Warp and ingame logos from stylehouse Designers Republic helping to establish that identity.

The only downside to this sense of calm is that when not involved in combat things can get just *too* relaxed. The environments are certainly immersive, but constant to-ing and fro-ing from one crater to another gets a little repetitive. At least in *Elite* it was possible to cut to the chase by making instant jumps across empty areas of space. The answer is to simply invest more effort into bounty hunting, of course.

Hardwar is ultimately a title more concerned with the long haul, though, and when appreciated in this way such niggles aren't so relevant. The ability to slowly and carefully gain power through brain and brawn is a timeless device. And with such materialistic pursuits accompanied by the gradual revelation of the conspiracy-filled storyline, the game takes on an epic tone that's hard to resist. Those who grew up playing *Elite*, flying trade routes to earn enough money to purchase a docking computer, will understand the appeal immediately. Those with a briefer gaming history are in for a pleasant surprise.

Edge rating:

Eight out of ten

DEEP FEAR

Format: **Saturn**

Publisher: **Sega**

Developer: **In-house**

Price: **¥6,800 (£35)**

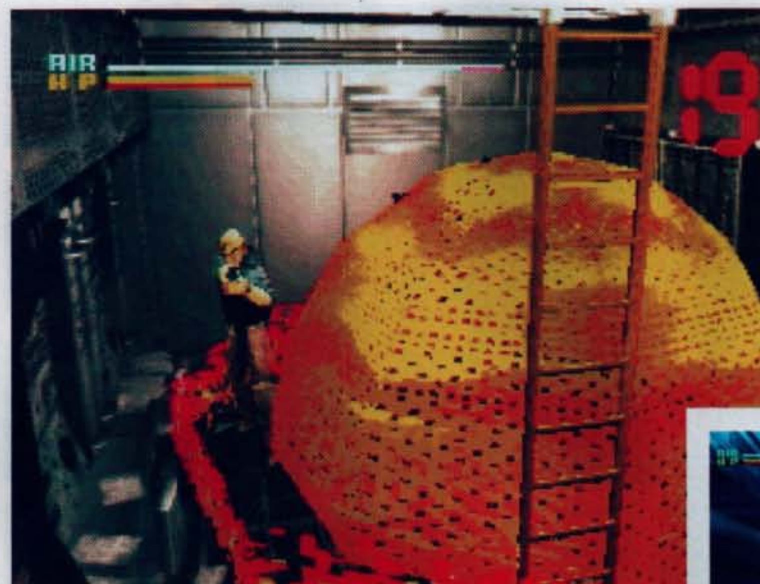
Release: **Out now (Japan)**







(From top) Basic character interaction, using an object, and choosing a weapon: three enduring aspects of console adventure games



This 'explosion' (above) is caused by a grenade during an early encounter with a mutated submarine captain. It's just another example of *Deep Fear*'s remarkable lack of subtlety – it's a brazenly simplistic, unsatisfying effect







Sega's *Deep Fear* is unique in that it emphasises the inherent truth in a popular phrase: 'imitation can be the sincererest form of flattery'. For, while most connoisseurs will enjoy the *Resident Evil* games for their impeccable atmosphere, tight design and evocative FMV links, those who encounter Sega's take on the same theme will doubtlessly begin to appreciate just how accomplished and how *polished* Capcom's two adventures truly are.

That *Deep Fear* (previewed last month) offers such a shameless reiteration of *Resident Evil* (and its sequel) is far more disturbing than any 'horror' set-piece it has to offer. And, while observing one of the industry's principle innovators backing such a brazen 'tribute' is deliciously ironic, Saturn owners will find *Fear*'s failure to live up to its pre-launch billing somewhat less amusing.

In principle, *Deep Fear* should be an enjoyable, if derivative experience. Yet, with substandard animation, wooden FMV links and atrocious dialogue, its obviously tangible attributes detract from its comfortably *familiar* gameplay. With plot-related prompts guiding the player to relevant locations and their accompanying set-pieces, *Deep Fear*'s linear progression is surprisingly satisfying – it genuinely piques that intrinsic 'gamer's urge' to discover what happens next.

The game's technical and creative shortcomings, however, are many and varied. Its monsters, for example, shamble aimlessly, their presence in any given area often being more nuisance than challenge. The design of its prerendered locales is also questionable, with seemingly unnecessary (and often arbitrary) perspective changes achieving little, save the disorientation of the player. But, above all else, *Deep Fear* lacks subtlety. The first monster to drop, unheralded, from a ceiling is genuinely surprising; the third or fourth markedly less so. Thus, the tension that so typifies *Resident Evil* is conspicuous by its absence. Sega's game appears amateur and ham-fisted by comparison.

With little visual or narrative appeal, *Deep Fear* must rely on its succession of object-related puzzles to entertain. Its FMV sequences become waypoints by which players judge their progress, its monsters mere obstacles on the route to satisfying the completist urge. Saturn owners starved of software may wish to draw their own conclusions, but **Edge** is disappointed, to paraphrase TS Eliott, to see the Saturn's tenure as a mainstream format in the west 'end' not with a bang, but with a whimper of 'me too'.





The rendered sequences (above) are disappointing, just like the ingame combat (left)

Edge rating:

Five out of ten

WARGAMES







The number of battling units is pretty impressive. There are over 100 units distributed between both sides, including these handsome quadrupeds (top right)

Format: **PC**

Publisher: **MGM Interactive/ Electronic Arts**

Developer: **Interactive Studios**

Price: **£40**

Release: **Out now**



Air and sea forces come into play in later levels. New strategies need to be formulated, with increasing emphasis on protecting the base

As with its PlayStation counterpart (see **E**61), developer Interactive Studios has ploughed a great deal of energy into this edition of *Wargames*, adding full 3D terrain to the realtime strategy formula. This initially feels little more than cosmetic, but is actually crucial to the mission designs.

Unusually, while the PC version is superficially identical to the console version **Edge** tested last issue, the user interface has been completely changed to take advantage of the mouse. So, rather than switching between units and taking direct control, it's back to the familiar point-and-click approach. It does rob this version of some individuality, and means there's no possibility of a split-screen twoplayer mode. But in play the benefits are hard to dispute.

There are 30 missions in total, with the opportunity to play on the side of the defending humans or direct the robotic forces of the War Operations Planned Response computer. These mechanised fighting machines pack more firepower, but tend to act a little less intuitively than human units. Constructor units and hackers provide the key to building up power, while money enables the building of landing pads to facilitate the arrival of new vehicles, grunt-producing factories, laser towers, and so on. The facilities and units are all familiar enough; with over 100 land, sea and air units there's plenty of opportunity for introducing the really impressive military gear in later levels.

The need to scour the landscape for computer installations to hack into for extra funds makes a pleasant change from all those spice-harvesting variations. And while directing units might well be a run-of-the-mill feature, the ability to zoom in and out, and rotate the scene always feels like more than a simple gimmick. It's quite possible to pull off some balletic mouse control when directing several groups in different areas of the map.

Like so many realtime strategy titles the pacing, control system, and combat structure owe a great deal to Westwood's trend-setting titles. But a few levels into the action it becomes evident just how much a difference that undulating terrain makes. From the way a rocket launcher can be placed safely behind a hill, raining its artillery down on helpless troops, to the need to take into account each vehicle's own way of navigating a map, there's a complexity to combat that places it above and beyond most post-*Command & Conquer* titles.

There are more polished RTS games out there, titles with a finer level of unit control and some that are more immediately gratifying. But *Wargames* succeeds because that extra dimension is evident in both the gameplay and the visuals. It's surprising how much of a difference that makes.

Edge rating:

Eight out of ten





The PC version is a little better at providing satisfying climaxes to each level, though the visuals don't really make the most of the 3D card support

BLAST RADIUS

Format: **PlayStation**

Publisher: **Psygnosis**

Developer: **In-house**

Price: **£35**

Release: **Out now**





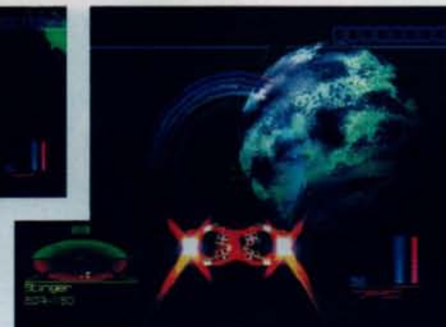
Psygnosis claims both games were secretly developed at the same time by different teams, but *Blast Radius* and *Colony Wars* seem suspiciously similar

Psygnosis' decision to release *Blast Radius* is puzzling, particularly as a sequel to *Colony Wars* (six out of ten, **E**52) is scheduled for release later this year. The company's first 3D mission-based space shoot 'em up, *Colony Wars* was attractive, but suffered greatly because of under-developed gameplay.

Blast Radius is also a 3D space shoot 'em up, split into (strangely similar) missions, and featuring pretty graphics. Admittedly, the latter are more appealing (making better use of the PlayStation's hi-res capabilities), but there's little else to distinguish the two titles.

Except, perhaps, for the fact that *Blast Radius* drops a significant amount of the strategy found in *Colony Wars* in favour of a more brainless arcade-style approach. There's little wrong with this, as long as all of the other required game elements are present, but sadly this is not the case here. There is painfully little innovation – some of the missions date back to the ageing *Wing Commander* series – and a feeling of repetitiveness rapidly sets in. This is particularly evident in the oneplayer mode, despite feeble incentives such as the ability to buy weapon and shield upgrades at the end of missions.





Visually at least, there's little to fault *Blast Radius*' pretty hi-res graphics and lighting effects

Thankfully, the link-up mode improves matters, and while the deathmatch option is not totally successful, playing the main game co-operatively opens up strategic team play.

Ultimately, this is never going to renovate *Blast Radius* into a magnificent experience but under the right conditions it can prove entertaining in short bursts.

Edge rating:

Six out of ten

1080° SNOWBOARDING (PAL)





1080°'s astounding dynamics are simply unmatched by the other current snow-based titles

Format: **Nintendo 64**

Publisher: **Nintendo**

Developer: **In-house**

Price: **£45 (Australian import)**

Release: **Out now (Australia)**
[Game supplied by Department1 contact 0171 916 8440]

Nintendo's decision to delay the European release of its splendid snowboarding title (eight out of ten, **E**57) until the Winter is frankly ludicrous. Its reasoning (that Winter-based games sell poorly during the Summer months) may hold a soupçon of truth, yet given the N64's current shortage of releases, any quality title is likely to top the charts with little difficulty, whatever season its release happens to coincide with.

Those unable to wait until November will no doubt welcome the recent Australian PAL release available from importers. Unlike the dreadful *Wave Race* conversion, *1080°* continues Nintendo's recent focus on the PAL market, boasting a fullscreen display. It's identical to the Japanese original in every way except for a slight – but nevertheless noticeable – drop in speed. However, the game maintains a healthy pace that should satisfy most players, and certainly anyone unfamiliar with the NTSC version.

The oneplayer mode remains the game's weakest aspect with frustrating CPU-controlled boarders on pre-determined paths, but many sublime moments are assured when engaging in the time trials, trick attack and contest options which allow players to fully appreciate the game's exemplary dynamics. Played on a large screen with the lights turned off and the sound effects turned up, *1080°* can prove a totally involving, almost mystical experience. As such, it remains the most convincing and entertaining snow-bound sim by a long way.

Edge rating:

Eight out of ten



The oneplayer mode may not be the game's forte, yet despite its flaws it's still supremely playable

F-Zero

Flying in the face of Mario's cuddly universe in 1990 was a revolutionary adrenaline-pumping racer on acid





Leaving the track after hitting a ramp (above) was one of the most exhilarating aspects of *F-Zero*. Powering up (above left) was essential













Landmines pepper certain sections of track (above left) and proved horrendous to negotiate at high speeds. Ice-like stretches (above right) weren't as challenging, but served well in mixing up the tempo

As a showcase title for Nintendo's 16bit Super Famicom, released to accompany its Japanese launch in 1990, *F-Zero* had its work cut out. Consumers had already tasted the delights of post-8bit-Famicom gaming via NEC's PC Engine and Sega's Mega Drive, and were anxious to see what exactly Nintendo would be bringing to the 'next generation' party. More than any other achievement at the time, it turned out to be Mode 7, an easy-to-unleash, yet super-effective, bitmap-scaling ability.

Previously seen only in arcades – Namco's tank-based *Blaster Assault* being the most famous exponent of the technique – the effects of Mode 7 in *F-Zero* were incomprehensible at the time of its release. Jaws met carpets as the game's tracks unfurled in an explosion of lurid colours and stomach-churning velocity. (The impact of the dizzying visuals proved enough, in fact, to induce vomiting among gamers of particularly weak constitutions.)

As a Nintendo game, of course, it was important that *F-Zero* carried itself on gameplay as much as it did technical merit, and it very nearly achieved that target. Offering four cups, of increasing difficulty, the game placed players in futuristic vehicles (from a choice of four variably powered examples), racing against three key competitors plus a selection of drones. The game's courses were littered with jumps, mines and other features laid on to take attention away from the fact that they were, of course, as flat as pancakes.

The hovering nature of the vehicles meant for looser handling than that of traditional driving games, resulting in an experience that was an acquired taste, some gamers finding the approach just a little too foreign for comfort.

Those willing to appreciate *F-Zero*'s nuances, though, were rewarded with a racing game of extremities, something that laid the foundations for the likes of the *Wipeout* series, *Extreme-G* and, of course, the inevitable sequel (see p86).

Publisher: Nintendo	1990	No 30
Developer: In-house	SNES	

DEVELOP

Charting videogame creation today, for tomorrow

3D Studio Max version 2.5 hits the shelves

3D *D Studio Max 2.5* is the latest release of Autodesk's 3D modelling and animation tool, which is now widely used in the games industry for the creation of models, cutscenes and other artwork. *Max 2.5* now adds many features, including improved NURBs curve support, camera tracking for matching live-action footage to models, and support for *Apple QuickTime 3.0*.

In particular, the additions to the NURBs support are particularly impressive, with several new methods of defining surfaces, controls for altering the texture coordinates on surfaces without altering the surfaces themselves, more precise subdivision controls, and support for applying displacement maps to surfaces. These features bring NURBs support in *Max* well into line with competing packages such as Alias|Wavefront's *Maya*.

As well as these improvements, with this new release developer Kinetix has added several important new features which are specifically designed to aid ingame development. Many developers are now using *Max* to create models or levels, which are then exported directly into the game itself, either through one of the internal file formats, or a custom *Max* plugin, and Kinetix has worked with many developers, including Psygnosis, to include features to assist in this process.

The new Boolean 'compound object' operation allows the creation of optimised meshes from several objects, not only reducing the polygon count and simplifying the model, but also reducing the number of polygon intersections which could lead to clipping errors if uncorrected. The resulting mesh is also easier to deform and edit than a collection of separate objects.

Objects and faces can now be sliced along a specified plane, creating two separate objects, allowing for easy subdivision of models, and forming of faces for effects or texturing. Textures can be easily assigned to individual object faces using drag-and-drop, greatly simplifying the process of texturing complex models.

While a significant step forward in terms of base functionality, *Max 2.5* still uses the same scanline rendering engine as *Max 2.0*, with options for raytracing specific materials, or using a plug-in to perform true raytracing. As a result the images produced, while spectacular, lack some of the effects that can be achieved using a true raytracer (such as the impressive freeware *Persistence of Vision*). Some of these effects can be duplicated using plug-ins and other tricks, but true raytracing is definitely the way to go now that standard rendering systems have progressed to the point where this is not prohibitively time-consuming.



This update includes new features – aimed at game developers – to ease the process of exporting models or levels designed in *3D Studio Max* directly into a game

3D Studio Max 2.5 commercial license: £2,695. Upgrade from *Max 2.0*: £75
Prices for educational establishments are available on request.
Contact Autodesk on 0171 928 7868

Places to visit:
http://www.ktx.com/ – Kinetix, *3D Studio Max* developer
http://www.autodesk.com/ – Autodesk, 3D Studio Max publisher
http://www.povray.org/ – Persistence of Vision, freeware







Created in *3D Studio Max* by the package's developer Kinetix, these images demonstrate the range of effects it's possible to achieve



Edge moves

Programmers, artists, engineers, producers, animators, project managers – they're all essential to the industry, and they all read **Edge**. The following pages carry a phenomenal variety of jobs for graduates, professionals and any other interested parties who think they could make it in the videogame scene. Apply within...

ARCADE VIEW

SPIKEOUT DIGITAL BATTLE ONLINE

SEGA BUCKS THE CURRENT SEQUEL TREND BY UNVEILING AN ORIGINAL BEAT 'EM UP TITLE

Developer: Sega
Release: September
Origin: Japan







The fourplayer linkup is *SpikeOut*'s USP – although don't expect to see such a setup often

Allegedly inspired by the company's *Streets of Rage*, *SpikeOut* represents something of a departure for AM2 producer Toshihiro Nagoshi who has previously concentrated most of his efforts on *Scud Race* and the *Daytona* series. However, Nagoshi-san isn't a total stranger to beat 'em ups, having had some involvement in the *Virtua Fighter* series.

SpikeOut represents a natural evolution from Sega's supreme *VF* titles, and offers the choice of four characters ready to battle their way through 3D environments. The nine levels are divided into two distinct areas: six for the downtown district and three in a department store reachable via escalators. Each level has the obligatory mid and end boss as well as a couple of secret areas for advanced players.

Visually, *SpikeOut* uses the second incarnation of Model 3 to great effect. The character animation is sometimes reminiscent of *VF3*, which is little surprise considering that was the lead programmer and character designer's previous project. But in terms of gameplay, *SpikeOut* differs greatly from its spiritual forebear. Its most striking feature is the ability to link four cabinets together via an optical fibre connection, encouraging cooperative play between four contestants to progress through the game.



The Model 3 (mk II)-powered visuals again set the standard for Sega's competitors to follow. Character animation is especially impressive

Given its technological innards, the cost of multiple *SpikeOut* cabinets could prove prohibitive for the majority of UK arcades, and will no doubt severely restrict the amount of fourplayer setups around the country. A shame, because for once there could be a real reason to drag three friends down to the local coin-op pit.

Sega has promised that *SpikeOut* will appear at September's JAMMA show.



Each of the characters possesses an impressive array of fighting moves. The nine levels are sppread over a shopping precinct and a downtown area





KING OF FIGHTERS '98 DREAM MATCH NEVER END

UNLIKE SEGA, SNK PREDICTABLY ANNOUNCES A FOLLOW-UP TO ONE OF ITS MANY FIGHTING TITLES

Developer: SNK
Release: Late '98
Origin: Japan





KoF's fans will welcome SNK's decision to refrain from making any radical gameplay alterations

Given that this is the fifth installment of the popular *Fighters* series, it would be unreasonable to expect SNK to come up with something straying drastically from its proven formula. So, the overall format remains (including the team battle and edit mode from the previous version) but this latest incarnation does include a few new additions. A roulette system during the team-selection screen forces players to choose other characters after winning a team battle, so that all 38 fighters need to be selected in order to successfully complete the game.

In normal one- or twoplayer mode, an advantage system has been implemented to automatically balance out the fights depending on the way players perform. Two modes of play are offered. One is based on *KoF '96*'s gameplay features which allow the use of an emergency escape move, targeted at experienced *KoF* players. The other, geared towards beginners, draws its inspiration from the 1994 and 1995 editions which gave players the chance to easily avoid attacks.







If players are to successfully complete *King of Fighters '98* they must fight with every one of the game's 38 different characters, requiring endless effort, a lot of time and a hefty supply of £1 coins

Overall, *KoF '98*'s gameplay remains very close to its immediate predecessor with improved character and combinations. Any radical changes would severely dissatisfy the hordes of *KoF* fans loitering in Japanese arcades.

SAMURAI SPIRITS 2

ANOTHER SEQUEL FROM SNK, BUT THE COMPANY HAS SHIED AWAY FROM ANY DRASTIC CHANGES

Developer: SNK
Release: TBA
Origin: Japan

After last year's disappointing offering, SNK returns with a predictably improved sequel. Two new characters have joined the 11 already present, all seeming to suffer from split-personality syndrome as players choose between a good and evil version of each. But the two supplemental brave fighters are not the only amelioration. New graphical effects accompany the variety of extra attacks and resulting combos, complementing the slight visual overhaul.

The gameplay has also been tweaked and the game is now more accessible as a result – for example, the 'fury' move is possible at any time during combat once the character's anger gauge is full. Furthermore, linking attacks or cancelling techniques is now smoother and far more intuitive than in the original.

While the graphical quality has not improved dramatically (remaining stubbornly close to the previous version), the visual interface has been stripped of the stamina and field gauges rendering it less cluttered and more player-friendly.

After last year's decision to enter the coin-op 3D fighting genre, SNK is taking things carefully and progressively. The quality will continue to improve but players are likely to have to wait for several more installments before a product matching the standard of *Virtua Fighter 3* comes along.





Samurai Spirits 2 is only SNK's second 3D combat title. The company has gone some way towards addressing its previous failings





The on-screen info has been minimised but the action remains as blood-happy as in the original

Gallery

The art of the videogame







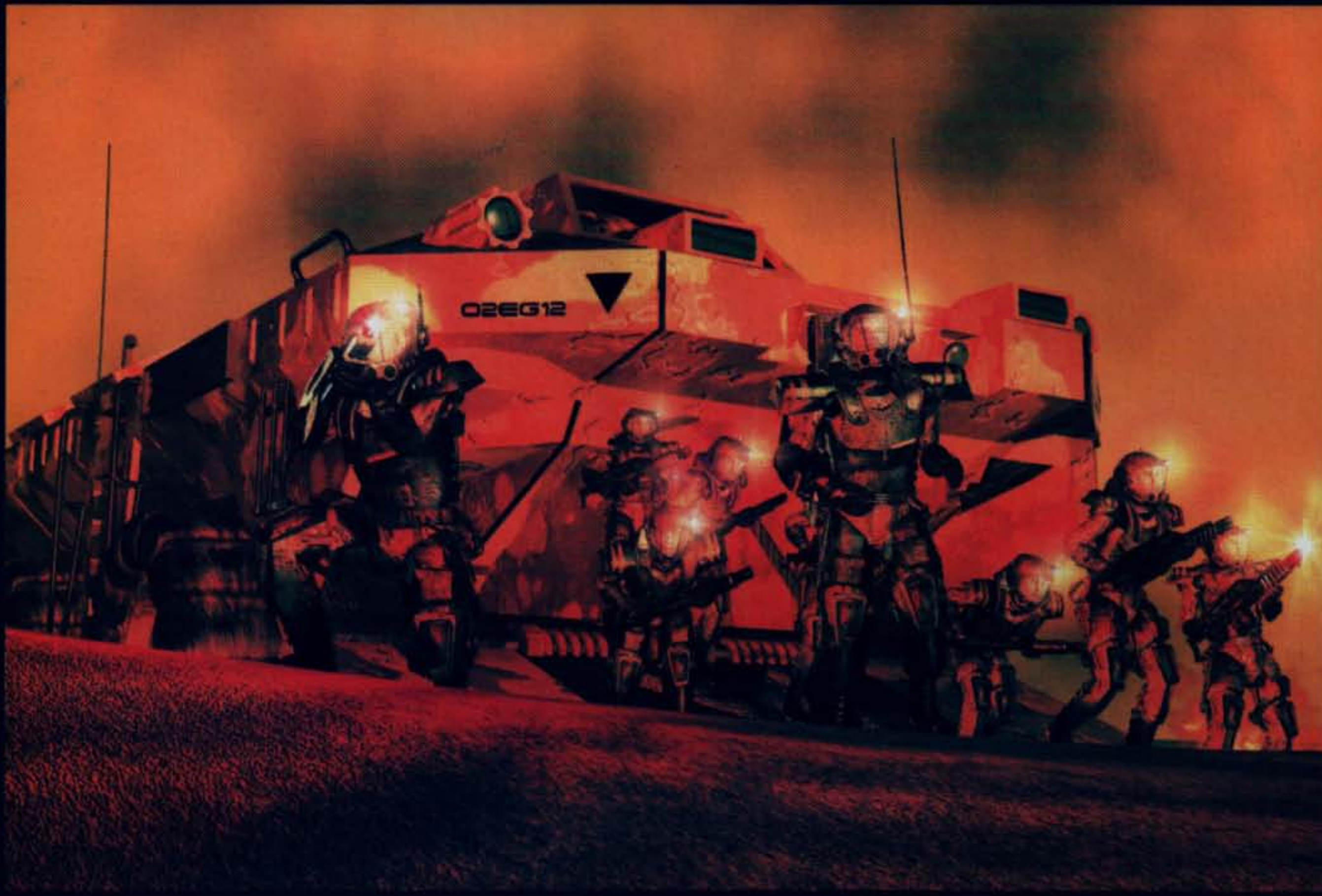






This astonishing main image, along with the other more indicative images of the actual game world, are taken from Reflections' forthcoming PC title *Steam* (see Alphas). The world the characters inhabit is submerged in a deadly mist, forcing its inhabitants to wear masks in order to survive. The setting is an intriguing mix of different technological ages – a sort of '"City of the Lost Children" crossed with "Brazil"', according to the game's creators.

Images rendered by Reflections' team of 30 artists using *Alias* and *Softimage* running on Silicon Graphics hardware







While the fidelity of prerendered sequences lies many levels above ingame visuals, they also improve more slowly. Shots of *Tiberian Sun* (such as those found on p40) show graphics far evolved from the figures of *C&C*. Yet Westwood's hi-res work still haunts the same, albeit unbettered, territory claimed by its earliest work. An emphasis on troopers – with more detailed faces and limbs – highlights the advances that have been made.

Images created by artists at US-based Westwood Studios using *3D Studio Max 2.0*







© Kalisto 1998

Kalisto's *Fifth Element* has a greater claim to authenticity than the majority of movie licenses, since both film and game share the same art director, Jerome d'Aviau de Piolant. Recruited to ensure consistency, d'Aviau de Piolant's efforts means the film's heroine, Looloo, has leapt the gap to the digital realm unscathed. The packed metropolis (above), with its multi-layers of airborne traffic, was no doubt too tempting to leave out.

Images rendered by Laurent Sesle, Hugues Gibom, Sylvain Doussett and Jerome d'Aviau de Piolant using *Softimage* and *MentalRay*

TUROK 2

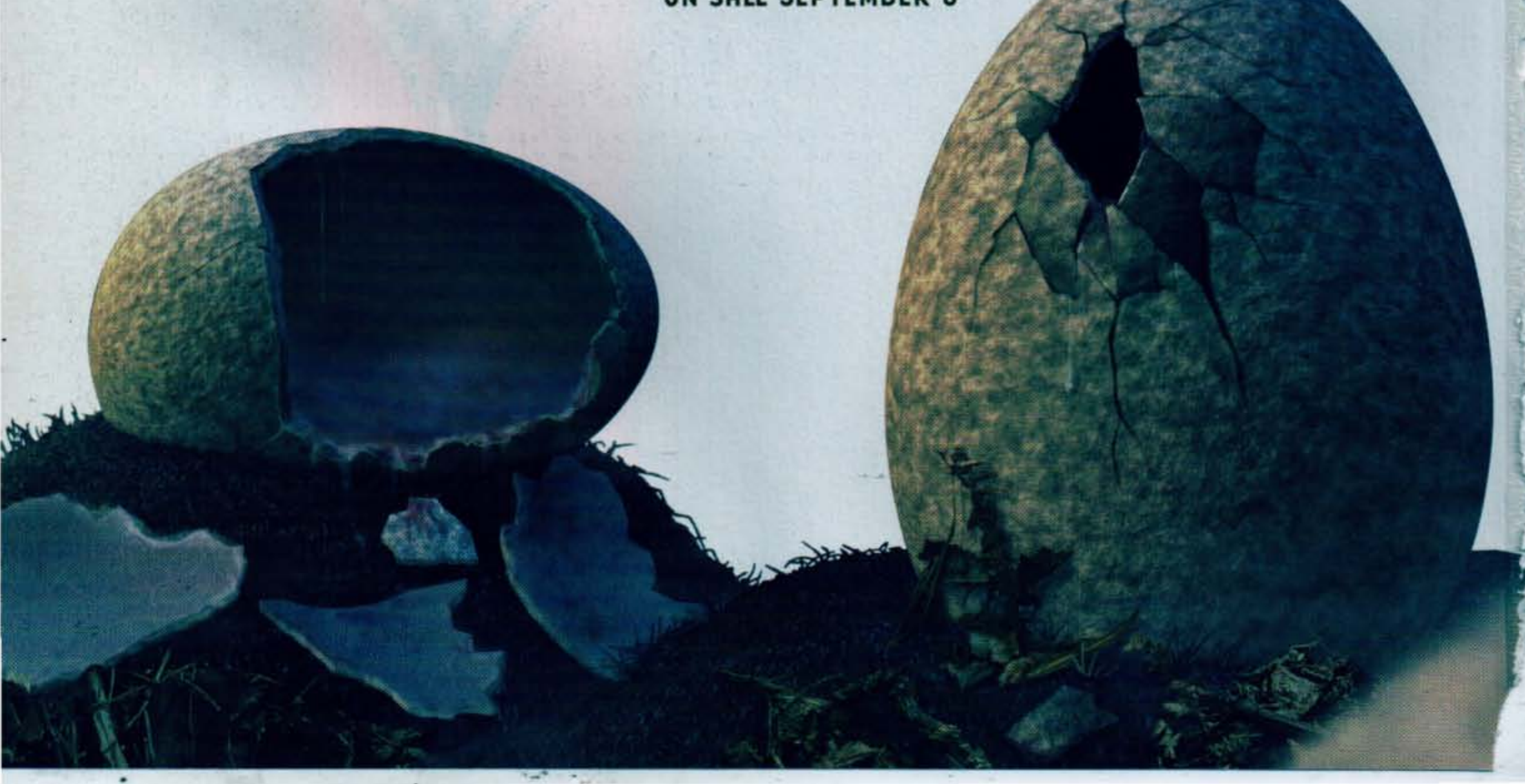
THE ORIGINAL *TUROK* STOOD TALL FOR TWO MAJOR REASONS:

1. IT PROVED THAT NOT ONLY NINTENDO COULD SQUEEZE MAGIC OUT OF ITS 64BIT GAMEBOX.

2. IT SINGLEHANDEDLY TURNED AROUND ACCLAIM'S FORTUNES.

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